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THE ROLE OF MENTAL HYGIENE IN GENERAL PRACTICE*

BY CALVERT STEIN, M.D.†

I. INTRODUCTION

"THE thing that hath been, it is that which shall be; and there is no new thing under the sun."[9]

The doctrines of mental hygiene are no exception to this ecclesiastical rule. Such proverbs as, "Hope deferred maketh the heart sick." (Prov. **13:** 12), "Better is a dinner of herbs, where love is—." (**15:** 17), "Better is a dry morsel, and quietness therewith, than a house full of sacrifices with strife." (**17:** 1), and, "A merry heart doeth a good like a medicine—." (**17:** 22), indicate that the new science of the prevention of mental ill health is little more than a repetition of ancient truths many of which have been forgotten in our all too busy lives.

Even the modern emphasis upon child guidance, the most promising field of mental hygiene, was anticipated some four hundred years ago by the Aztec Indians[34] who laid down the following cardinal rules for the guidance of their children: "(1) The avoidance of gormandizing and the careful regulation of food, (2) the avoidance of idleness, (3) strict punishment, and (4) vocational training."

Moreover, the following additional excerpts from the Book of Proverbs indicate that the Aztecs, in turn, were anteceded by at least two thousand years by the writers of the Old Testament: "Even a child is known by his doings—." (**20:** 11), "—but a child left to himself bringeth his mother to shame." (**29:** 15). "Foolishness is bound in the heart of a child; but the rod of correction shall drive it far from him." (**22:** 15). "Train up a child in the way he should go, and even when he is old, he will not depart from it." (**22:** 6).

There is nothing new in mental hygiene, then, except perhaps the somewhat tardy recognition that children, though small, have sensitive personalities of their own, with a desperate need for sympathetic understanding. It is this need which modern child guidance aims to supply; thereby offering the most hopeful avenue of approach to the problems of social maladjustment and personal unhappiness.

*Read in part before the Hampden County Medical Society, September 25, 1935.

†Stein, Calvert — Senior Physician, Monson State Hospital, Palmer, Mass. For record and address of author see "This Week's Issue," page 700.

II. HISTORICAL NOTE

In addition to the proverbs quoted above, the great Chinese philosopher, Confucius (550-478 B.C.), in his inclusive character "shu", laid down what is probably the most valuable rule in the whole realm of human relations: "What you do not like when done to yourself, do not do to others."[11]

A thousand years later Caelius Aurelianus (500 A.D.) anticipated the fundamentals of twentieth century psychiatry by placing his patients "under the best conditions of light, temperature, and quiet; and recommended that everything of an exciting character should be excluded. Of particular interest are his references to tactfulness in attendants for the avoidance of antagonism, and to the limited and cautious use of physical restraint—theatricals, entertainment, riding, walking, and work were all recommended, particularly during convalescence.—He denounced semi-starvation, bleeding, chains, and excessive drug therapy[16]."

Another nine centuries elapsed before the establishment of the first mental hospitals at Granada, Spain, and Bethlehem ("Bedlam"), London in 1403; but not until 350 years later did modern mental hygiene begin in earnest, when in 1751, through the combined efforts of Benjamin Franklin and Dr. Thomas Bond, a prominent physician of Philadelphia, a charter was obtained for the first hospital in America for the care and treatment of the insane. This was opened in Philadelphia in 1752, and for thirty years Dr. Benjamin Rush, Chemist, Surgeon, and Revolutionist, "the father of psychological medicine in America, was the skilled physician and faithful friend of all its patients ——."[21]

Still later, 1792, Philippe Pinel, a French pathologist and internist, startled the medical world in Paris by removing the chains from the insane patients at the Bicêtre; while in 1796 William Tuke and Lindly Murray opened the York Retreat in England.

The nineteenth century gave us Dorothea Dix (1802-1887), a Massachusetts school teacher and philanthropist, who was responsible for the founding of many state mental hospitals in the United States.

Finally, in the twentieth century, Dr. Thomas W. Salmon, first Medical Director of the Na-

tional Committee for Mental Hygiene, and Dr. Adolph Meyer, Professor of Psychiatry at Johns Hopkins and early adviser to the National Committee[12], together with a score of other renowned psychiatrists many of whose works have been drawn upon for this compilation (see references), are the leaders who have helped to materialize some of the principles set forth by Caelius Aurelianus, fourteen hundred years ago.

Mr. Clifford W. Beers[1], secretary of the National Committee for Mental Hygiene (1909) is largely responsible for the popularization of the aims and doctrines of mental hygiene which is gradually changing the attitude of the general public to one of tolerance for the insane, and to a realization that "psychiatry has at last changed from a descriptive science carried on, for the most part, by individuals whose main preoccupation was the kindly and pessimistic custody of deteriorated persons, to a science led by men (who are) vividly interested in education, delinquency, sociology (psychology), and other stimulating and hopeful approaches to the problem."[6]

III. ORIENTATION

Menninger describes a healthy mind as "—— the ability to maintain an even temper and alert intelligence, socially considerate behavior, and a happy disposition." It therefore implies "——the adjustment of human beings to the world and to each other with a maximum of effectiveness and happiness."[26] We may define mental hygiene as the prophylactic branch of psychiatry which deals with the preservation of mental health.

"Seven hundred thousand persons in this country now going daily about their work and play, and apparently well adjusted, are definitely ticketed for state mental hospitals within the next ten years. (This conclusion is based upon statistical evidence, and presumes no increase in the admission rate of about seventy thousand patients per year to our mental hospitals.) To find these persons long before they reach the stage of frank madness, and to discover and abort the illness if possible, is the aim of mental hygiene."[43]

Fortunately, the general practitioner is in an enviable position to accomplish this aim. For, as Hunter[20] says, "The family physician occupies the unique position of doctor, general advisor, friend and confessor and he needs must be at least a little of each of these. He enjoys an intimacy that affords an unparalleled advantage in approach. He knows the family constitution through personal observation. He knows all the family skeletons and the present and past reactions to them. He knows the family morale and the individual capacity for intelligent coöperation. For these reasons it would seem economic and proper for this line of first defense—the family doctor—to be better prepared to deal with the question and to evaluate anew the neuropsychiatric factors of ill health and disease."

Lest it be thought that this is anything new in teaching ideals it may be well to note the remarks of Jacobi in the first presidential address before the American Pediatric Society in 1889; "Unless the education and training of the young is carried on according to the principles of a sound and scientific physical and mental hygiene, neither the aims of our political institutions will ever be reached nor the United States fulfill its true manifest destiny—of raising the standard of physical and mental health to possible perfections." Forty-six years later, Fife[13] continues to hope: "My simple plea in this paper is to urge that pediatricians become more conversant with the educational, social, psychologic and psychiatric phases of child health, so that they may become worthy preceptors and consultants in the homes—family advisors for children—and so that they may remain leaders in all activities directed toward the promotion of child welfare. This pediatric parental preceptor is still in his infancy——."

Nevertheless the family doctor is already doing commendable work along preventive lines, in an effort to keep down the incidence of mental disease. He is competent in the prevention of the exanthemata and their sequelae as well as in the realms of rachitis, meningitis, cretinism, syphilis, alcoholism, vitamine deficiencies, and many other diseases which have neuropsychiatric complications. He is alert to recognize the need for prompt treatment of such congenital defects as cleft palate, harelip, webbed or supernumerary digits, cryptorchism, tied tongue, or any other anomaly or blemish which may be significant from a physiological as well as psychological viewpoint. He is able to recognize a psychosis, often even in its early stages and is usually prompt in referring it to the psychiatrist for treatment; while he himself does well enough with the ordinary acute psychiatric complications of alcoholism, puerpera, and fevers. He is becoming more and more adept in the art of psychotherapy, in the use of a polished bedside manner and a sympathetic attitude, as well as the well-known "tonic" (color rubro). He knows the value of a thorough physical examination in the treatment of the psychoneuroses which, as is well-known, constitute a large portion of his private and clinical practice (thirty to sixty per cent according to Pratt)[32] and which cases he usually sees long before they reach the internist or psychiatrist. He knows, too, the wisdom of merely allowing the patient to talk out his problems, even though he seldom can afford to grant the necessary hours for such therapy. Lastly, he is already adept

at prescribing for temper tantrums and feeding problems, whether they are the result of overindulgence, "Motheritis", irregular habits, faulty discipline, or other causes.

But it is a comparatively recent doctrine even for psychiatrists, that the emotions and personalities, too, may be traumatized by neglect of the early manifestations of their disorders (Cannon, Crile, Freud).[42]

Moreover society is now developing a "health consciousness" concerning mental hygiene that it has already acquired regarding many problems of public health and preventive medicine; consequently "the intelligent layman (and his numbers are growing rapidly in every community) is more ready to avail himself of modern psychiatric service than ever before".[31]

It remains, therefore, for the good physician to add to his therapeutic armamentarium merely a bowing acquaintance with child guidance, psychiatric social service, and psychometry, and to become more familiar with their application to the problems of insecurity, vocational guidance, the unmarried mother, borderline intelligence, juvenile delinquency, and "emotional immaturity", in order to fill the cup of his specialized knowledge to overflowing. For, as Frank aptly expresses it: "The great doctor must know almost as much about the social order as the sociologist. This is necessary because the varied forces — political, social, economic, industrial, educational, religious — that march across a nation, making its mind or marring its spirit, register their effects in the lives of the doctor's patients. The more the doctor knows about these forces that make the atmosphere in which men's minds and bodies live, the more intelligently can he trace effects to their causes, and the more wisely can he counsel his patients.

"The great doctor must know almost as much about the mind as the psychologist. This is necessary because even the most materialistic scientist admits that there is a subtle relationship between mind and body that the doctor of the body dare not overlook, for when he does overlook this relationship a thousand quacks rush in to capitalize his oversight.

"The great doctor must know as much about the subtle art of counselling as the priest."[14]

IV. STATISTICS

One explanation of this increasing demand for psychiatric information and service may be the disproportionately small number of physicians who are engaged in the neuropsychiatric specialty. "There are in the United States six hundred and thirty-one hospitals for the care of nervous and mental cases. It will be noted that the number of nervous and mental institutions is less than ten per cent of the total number of registered hospitals; but that in capacity and number of patients, they represent nearly fifty per cent of the total."[18]

The total number of physicians in this country is 178,516.[7] The number of physicians especially interested in neurology, psychiatry, or both is only 2,341, these include residents of mental hospitals.[8] Thus, less than two per cent of the physicians of the United States are burdened with the care of fully fifty per cent of the sick population of the country, the bed cases of which alone number close to one million people. A similar disproportion exists in the nursing field in which only eight per cent of the training schools, and only five per cent of the student nurses in the United States are in mental hospitals.[22]

Although it is true that, to a considerable extent, every physician is a psychiatrist whether he wills it or not, it is also true that the busy general practitioner is only just beginning to make up some of the defects in his psychiatric education. This paper is designed to assist him with an introduction to the study of what has been termed the "Cinderella of Hygiene".

V. A CLASSIFICATION OF PROBLEMS IN MENTAL HYGIENE

The common problems in mental hygiene may be divided conveniently (but arbitrarily) according to their appearance during the several periods of growth as follows:

1. Infancy—under two years of age; feeding difficulties, night cries, habit spasms, and the question of adoptability.
2. Childhood—from two to twelve years: incorrigibility, enuresis, speech defects, retarded development, undue shyness, thumbsucking, nail-biting, failure in school, pilfering, and sometimes masturbation, truancy, and stealing.
3. Adolescence—from thirteen through the teen age: vocational guidance, personality changes, problems of puberty, sex, and delinquency.
4. Adulthood—twenty-one years and over: responsibility, personality, marriage, and parenthood.

Each age group has specific problems of its own; and each may be complicated by problems which should have been corrected previously, but, instead, have been carried over from an earlier level in the expectancy that they would be outgrown. All of them, however, have certain underlying factors in common which may be grouped under the headings of security, sex, and maturity. Most important of these is security, but an understanding of all these common denominators as determined for the specific case will serve to simplify the study of any given problem. For detailed accounts of the specific complaints listed in the classification above, the interested student is referred to the standard works on specific phases of mental hygiene, child guidance, sociology, and psy-

chology by Thom[37, 38], White[41], Campbell[4, 5], Plant[29, 30], Hart[17], Wickes[42], Myerson[27], Stearns[36], Glueck[15], Huhner[19], Lindsay[24], Ellis[10], Van de Velde[39], Westermarck[40], and scores of others[2, 3, 35], many of which are to be found in the extensive reading list by Levy and Coburn.[23]

VI. ETIOLOGY

Factors involved in the causation of difficulties in behavior are classified by Lowrey[25] as follows:

1. Gross mental deviations — feebleminded-ness, psychoses, encephalitis, lues, and tumors.
2. Gross physical deviations—including deformities, and handicaps as of the senses, sight, hearing, etc.
3. Psychoneuroses.
4. Conflicts with individual drives against group thinking, group law, group morals, society, etc.

"Problems in this group," says Lowrey, "do not always need a psychiatrist—they sometimes heal with time alone. Most of us manage to achieve some sort of compensation in our lives as we go along. We achieve some sort of balance in our personality, some maturity in point of view, some emotional poise. We manage in some way to make a fairly successful adjustment to life whereby we do not do too many things that distress other people, or at least we do not have any gross signs of failure of social adaptation. Here child study groups and church and education, the law, medicine, psychiatry, psychology, and so on, have definite contributions to make."

5. "Faulty training by ignorant parents (and teachers) is the simplest group to deal with," says Lowrey, "and child study organizations have made some real contributions to it."

VII. TREATMENT

As in the treatment of tuberculosis and carcinoma, there is an important time element and unavoidable cost. "The treatment of a disease may be entirely impersonal" (laboratory procedure, surgery, instructions to internes and nurses) "the care of a patient must be completely personal—and the failure of the young physician to establish this (intimate personal) relationship accounts for much of his ineffectiveness in the care of patients" wrote Francis W. Peabody nearly a decade ago. In "The Care of the Patient" this great internist presented the following principles for guidance and analysis of the situation.[28]

1. "Sickness produces an abnormally sensitive emotional state in almost every one, and in many cases the emotional state repercusses, as it were, on the organic disease."

2. "Death is not the worst thing in the world, and to help a man to a happy and useful career may be more of a service than the saving of life."

3. Nausea, vomiting, diarrhea, tachycardia, occipital headache and gastric distress are symptoms that may accompany the nervousness attendant upon an impending examination, a forthcoming speech or public appearance, or participation in a sports contest—but they are just as distressing as though they were from some organic cause.

4. Ordinarily the symptom vanishes when the occasion for the nervousness has passed—but if instead of an important three-hour examination, e.g., the patient has to face a lifetime of disappointment, failure or hardship—then the factor of repetition fixes the unusual emotional viscerosomatic response into a conditioned habit and instead of saying "I cannot stand this life," the patient says, "I cannot stand this nausea and vomiting. I must go to see a stomach specialist," and thus the neurosis becomes securely established.

5. When thorough examination discloses entirely negative findings on such a patient "you are in the difficult position of not having discovered the explanation of the patient's symptoms. You have merely assured yourself that certain conditions are not present."

6. "Sorrow, disappointment, anxiety, self-distrust, thwarted ideals or ambitions in social, business or personal life, and particularly what are called maladaptations to these conditions—these are among the commonest and simplest factors that initiate and perpetuate the functional disturbances."

7. "Sometimes the mechanism of cause and effect is obvious; (backache in a woman on first experiencing domestic unhappiness, headache from unfulfilled ambitions, or a functional tachycardia from years of brooding over a functional murmur about which a physician once told the patient 'not to worry'); sometimes it becomes apparent only after a very tangled skein has been unraveled."

8. "Time, sympathy and understanding must be lavishly dispensed, but the reward is to be found in that personal bond which forms the greatest satisfaction of the practice of medicine."

Richardson, in a recent publication[33], presents some excellent illustrations of the clinical manifestations of these mechanisms. The following three cases from the Springfield Child Guidance Clinic are selected to illustrate the handling of three common and very troublesome problems, viz., incorrigibility, enuresis, and stammering or stuttering.

CASE 1: R. (S. H. C. G. C. No. 10434), white boy, aged five and one-half years, in first grade.

A. Complaint:

1. Incorrigible and negativistic behavior.
2. Unresponsive and failing in school.

B. Relevant Data: Mother was the ninth of ten children, and led an unhappy early life. She was compelled to leave the seventh grade, and to work out as a mother's helper; and has always longed for a chance to return to school. Her own mother, who was always very strict and used to beat her, together with two of R.'s maternal aunts, both spinsters, came to live with R.'s family when he was only two weeks old; and have remained there ever since.

Physical Findings: 1. Defective tonsils; 2. Cryptorchism (bilateral, incomplete); 3. Malnutrition (15 per cent underweight, pot-belly, slow pulse, moist hands, cold feet); 4. Enlarged anterior cervical lymph nodes.

C. Diagnosis:

1. Retarded Intelligence (I. Q. 87—technically dull).
2. Chronic tonsilitis, and anterior cervical lymphadenitis.
3. Bilateral cryptorchism (incomplete).
4. Malnutrition (old rachitis, and tonsilitis).

D. Analysis: 1. Mother's early deprivation of scholastic opportunities has caused her to place a high premium upon formal education, so that she takes R.'s failure in school very much to heart. 2. Even if R. were not emotionally handicapped by the divided disciplinary attempts of mother, grandmother and the two aunts at home, his mental age of four years and eight months indicate that he is nearly a whole year retarded, and just ready to begin kindergarten, let alone be finishing a regular first grade. 3. Father seldom interferes at home, but the irritable aunts, and whining "nervous" grandmother require quiet, attention, and implicit obedience from R. as well as from his older brother, and two younger sisters. 4. While the father has never protested the presence of his wife's relations in his home, financial difficulties incident to the depression have made the mother conscience-stricken, so that in addition to all the housework, she has more to strain her emotional composure than the average mother of four young children should have. 5. To top it all, R.'s three siblings are all decidedly brighter than he is; and this fact, together with the mother's high standards, and his own inability to grasp first-grade work (which normally requires a mental age of five and one-half to six years) cause him to appear stupid by comparison with his classmates, making his lot unenviable, and his life miserable.

E. Treatment: The incorrigible behavior—tempertantrums, destructiveness, disobedience, and feeding difficulties—are R.'s attempts to overcome his feelings of insecurity. Until efforts were made to convince him that he need no longer feel insecure, despite his physical and intellectual limitations, obviously no relief could reasonably be expected.

Removal of tonsils and an orchidopexy might assist him physically, and the issuing of walking papers for grandmother and the two maiden aunts might make life more bearable at home, but until the mother could lower her scholastic standards, and become more willing to accept something less than an intellectual genius from R., only slight improvement could reasonably be expected.

Unfortunately, truth often proves to be too shocking to ambitious parents, so that at first they may refuse to return to the clinic, resenting such suggestions as may threaten the security of their own ego. R.'s mother was no exception to this common rule so that not until after many months of intensive psychiatric social work, followed up in her own home by a skilled and tactful worker, did she finally consent to taking R. out of school, whereupon the majority of the complaints promptly vanished. A year later, back in school with a mental age more consistent with the demands of first grade, he has shown a vast improvement; and even the mother has asked permission to return to the clinic for a check upon our findings and for further guidance.

CASE 2: B. (S. H. C. G. C. No. 19275), white girl, aged fifteen and a half years, a sophomore in high school.

A. Complaint:

1. Nocturnal enuresis—duration nine years.
2. Poor work in school.
3. Indifferent toward schoolmates, associates with younger children, plays with dolls, cries easily.

B. Relevant Data: Father, the second of six children, from all of whom he is estranged, was the first son and the only one to go to college. He was formerly a successful professional man; but has become irritable, asocial and quarrelsome. He is losing his patients, as well as the respect of his friends and family. His preference for B.'s brother has turned her adoration to bipolar hatred for him. He never came to the clinic, or acknowledged our letters.

The mother is colorless, but coöperative; and in contrast to the father, has a very close tie with her two children as well as with her own family. Tactful handling of B.'s father permits her to make the final decision for the family in most cases, despite the father's ill temper, and unreasonable behavior.

Junior, two years younger than B., is her superior in every way, and is by far the favorite all round. He is fond of teasing her to distraction.

At two years of age B. was trained in toilet habits. At six years she experienced a long siege of illnesses, after which bed wetting returned, and has been more or less constant ever since. Scolding has only produced indifference to the habit. Her one refuge is a devoted maternal grandmother, whom she visits frequently.

C. Diagnosis:

1. Retarded intelligence (I. Q. 88—technically dull).
2. Malnutrition (fourteen per cent underweight).
3. Facial acne vulgaris (mild)—(additional cause for self-consciousness).
4. Emotional insecurity—rivalry of brother, and father's indifference.
5. Enuresis on basis of habit plus the insecurity.
6. Failure in school on basis of retarded intelligence plus a carry-over of her protest against insecurity.

D. Analysis: B.'s presence on the honor roll up to the sixth grade indicates that more than mere intelligence may boost a candidate to that position in the elementary grades. At that time the work became more difficult, and she lost the security afforded by the high marks. Since then all her energies have been required merely to keep up with the class, and her logical reaction was one of dislike and resentment. The enuresis may have begun quite accidentally during the fluid therapy associated with the exanthematous fevers at six years of age, or it may have been a subconscious emotional manipulation of the natural desire (reminiscent of cradle days) to continue to enjoy and prolong the extra devotion and attention which she received during her protracted illness (Freud). Repetition (habit), and faulty discipline (scolding, punishment, reminders) soon fixed it into what she had come to believe was an incurable habit—so that she carried a rubber sheet with her whenever she slept away from home.

The association with younger children and dolls merely afforded less competition, and allowed her

to continue as the "big boss" of the group (compensatory, in much the same spirit that children display when they want to be teacher when playing at school).

E. Comment: B. was invited to keep a record of her dry nights on a private calendar; and was agreeably surprised to find that she had had nine dry nights, the last four of which were in succession, by the end of her first month. Restriction of fluids after six P.M.; omission of condiments, and other exciting factors (radio, games, books); and the cooperation of the family in avoiding all mention of the habit, including reduction of Junior's teasing, were materially helpful. B. was duly praised and for her effort was awarded a pass to the theatre (furnished through the courtesy of local cinema houses). She was told that such a record proved that her urinary system was normal, that enuresis was a mere habit like nail-biting, and that it could be controlled with practice. An attractive calendar, mounted on a piece of leathercraft (done by one of our rehabilitated juvenile delinquents) was presented to her with instructions to note how many more D's (representing dry nights) she could record by the next visit. No reward was promised; but when deserved, there was nearly always some game, book, or theatre pass to give suitable encouragement. During the next seven months she succeeded in recording 20 to 30 D's per month, according to circumstances at home. Thus, when report cards were poor, or disappointments were frequent the D's would fall off. Despite the father's neglect to answer our letters, or to visit us, his ultimate coöperation was apparent and the mother reported that he looked forward to receiving our reports. Soon B. began to take renewed interest in her dancing, in which she was talented; and to work harder at school. Simultaneous treatment by family physician for acne and malnutrition was successful.

Enuresis recurs now only sporadically (once in eight to twelve weeks). B., who is really attractive, is becoming increasingly popular with her own set; and, despite her limited intelligence, is going to graduate from high school.

Hers is an unusually good adjustment to an unfavorable environmental influence, for enuresis is one of the most difficult symptoms of insecurity that the child guidance clinics are called upon to treat.*

CASE 3: T. (S. H. No. 13064), aged fifteen years, junior in high school.

A. Complaint:

1. Stuttering (Stammering)—duration eight years.
2. Request for vocational guidance.

B. Relevant Data: An only child—difficult labor—very sensitive. When the mother suggested castor oil recently for abdominal pains, he told her she "must not be so personal." Cried, and refused to recite in school through fear of ridicule; result — low marks.

C. Diagnosis:

1. Stuttering dysarthria.
2. Introverted adolescent.
3. Superior intelligence (I. Q. 121).

D. Analysis: T. talked too rapidly, and therefore stumbled over his words. An attractive, tall boy; he was self-conscious about his size, and also about his defective speech, which had begun innocently enough shortly after a boy playmate who stuttered badly had moved to a distant neighborhood.

E. Comment: T.'s natural bent for mechanical things was encouraged. He and the psychiatrist spent many hours in each other's workshops, exchanging ideas, and assistance. From a few simple lessons in amateur photography T. has built up, during the past three years, a demand for his photographs by local newspapers; and also makes enlargements, and creditable lantern slides for lecturers. The technic for correction of his defective speech is fairly simple, and may be embodied briefly into the following rules which have proved to be effective clinically in most of our cases*.

F. Rules for Correction of Stammering (or Stuttering):

1. Always speak very slowly. Precept on the part of teachers and members of the family is more important in this connection than reminders, scoldings, or forcing the stutterer to repeat his broken words.

2. Rounding of the lips into exaggerated pronunciation of the letters, as though speaking through a megaphone, helps to overcome a very common source of dysarthria—viz., the habit, when speaking, of using only the tongue and mandible, as do ventriloquists. Part of this is habitual (often in imitation of elders), and part of it is caused by fear. Speaking without the use of (or with minimal use of) lips or mandible produces a stilted and flat, fallible vocalization which inevitably invites trouble with such consonants as B, F, M, P, Q, V, W, and Y, all of which properly require the use of lips and teeth, as well as tongue and mandible.

3. Consonant formation, for stammerers, comes more easily when the troublesome letter is not the first letter of the word. Thus "B" in "ambition" usually offers considerably less trouble than "B" in "bandit". Therefore, one way to uncondition the offending letter is to practice with long lists of words containing the desired letter in the middle, or at the end, e.g., "oboe" and "hubbub".

4. The element of fear produces tension. There is more tension in the respiratory system at the end of inspiration than at the end of expiration; consequently, stammerers are advised to exhale forcibly before and during speaking. (The counsel to whistle before speaking has the same respiratory as well as psychological effect, but is too audible to be suitable for permanent reëducation.)

5. Often an inaudible aspirant "h" before offending vowels, and before such consonants as "f", "l", "m", "n", "r", "s", "w" and "x", facilitates their pronunciation without stammering, and serves to boost the stutterer's self-confidence. Thus, "h-after" (hafter), "h-empty" (hempty), and the practice of the letters "h-el, h-em, h-en, h-ar, h-es, h-ex, h-oo-w-i" and the vowels "hay, he, hi, ho, and hee-oo (hu)"—still rounding and exaggerating the use of the lips—are valuable exercises.

6. Practice lists of selected words—if necessary, omitting the offending initial letter at first until repetition and confidence permit its inclusion—are valuable. Thus, "-ord, -omen, -ife, and -eight"; later adding the "w" with an inaudible "h"; thus, "hoo-w-ord", "hoo-w-oman", "hoo-w-ife", the "hoo-w" being practically inaudible, whispered, and formed largely by an expiration and a rounding of the lips as in saying the word "who", softly blowing out the vowel.

7. In obstinate cases, entire words, rather than mere letters, on which the patient stammers must be analyzed for pertinent associations before the difficulty can be overcome. The habit of forgetting names, dates or experiences, with impersonal or unpleasant associations, is a familiar demonstration of this mechanism. (Freud's "Psychopathology of Everyday Life.")

*A detailed report on the treatment of fifty cases of enuresis at the Springfield Child Guidance Clinic since 1931 is in preparation.

*A detailed report on the treatment of defective speech as carried out at the Springfield Child Guidance Clinic is in progress.

Only a little practice with a few cases of defective speech is needed to give the educator a valuable tool with which to help these unfortunate people.

T.'s coöperation and conscientious practicing have long since overcome his stuttering, although at times he still speaks too rapidly. His personality has blossomed materially, and he plans to enter college as soon as his financial status permits it. He is at present a successful salesman of photographic supplies.

VIII. SUMMARY

1. Biblical and other early literature give evidence that there is little that is new in the modern doctrines of mental hygiene. (Section I.)
2. The development of enlightened psychiatry and the work of the National Committee for Mental Hygiene in popularizing the newer attitudes toward the patient who is mentally ill is sketched. (Section II.)
3. The importance of the movement is evidenced by statistical data. The enviable position occupied by the family physician is not entirely neglected by him; and he does much along prophylactic lines in the field of organic disease. (Section III.)
4. Less than two per cent of the physicians of the United States and five per cent of the nurses are burdened with the care of fully fifty per cent of the sick population of the country, the bed cases alone of which number close to one million people. (Section IV.)
5. The problems of mental hygiene are conveniently classified; and references to standard authorities on specific phases of psychiatry, sociology, psychology and education, are given. (Section V.)
6. Lowrey's classification of etiological factors is presented in Section VI.
7. Essentials of treatment are followed by a brief résumé of three important and troublesome clinical cases: Incorrigibility, enuresis, and stammering. (Section VII.)

IX. COMMENT

The author is not unmindful of the very large percentage of psychoneurotic patients who remain incurable for the sufficient reason that no mortal healer is able to offer them better substitutes for the unbearable realities from which they seek to escape. The usual avenues of sublimation may be totally inadequate to compensate the unhappy sufferer for the grim realities of rejection, insecurity, disability, and poverty. The ranks of psychopathic addicts claim many of this class for chronic "neurotics", alcoholics, narcotic addicts, and other social, moral and legal transgressors; for there are many people who are unsuited by native intelligence, ability, and training to assume more than a very limited degree of responsibility, independence, and maturity. But, as in the realms of tuberculosis and malignancies, so too with disordered personalities, our only hope is in early diagnosis and intensive therapeutic efforts. To help these people to find their natural level in order that they may better be enabled to maintain a happy balance in our complex civilization, is one of the aims of mental hygiene.

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UROLOGICAL COMPLICATIONS IN GENERAL SURGERY*

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A COMPLETE list of urological complications in general surgery would be beyond my power to present and beyond your endurance to hear. It is my intention rather to select for comment certain complications which have occurred in my own experience and to describe them in sufficient detail to give you a definite picture of the particular situation.

Urological complications may be divided into three classes: those due to errors of diagnosis, those due to errors of technic, and those which we may consider as more or less unavoidable complications.

Complications due to errors of diagnosis. In considering as complications those urologic conditions which existed before operation, which were not recognized as the primary cause of the patient's symptoms, and which still existed after the operation had been carried out, I may be stretching the meaning of the term "complications" somewhat unduly. These conditions most certainly do cause diagnostic confusion and unless they are remedied by appropriate treatment, they continue to persist after operation as definite urological complications. Almost without exception, these conditions may be diagnosed by appropriate measures; the error lies in arriving at a diagnosis without having employed those methods of investigation which will lead to a proper solution of the problem.

A paragraph borrowed from an article written in 1911 by Maurice Richardson[4] expresses the situation. "We all know, but we do not always realize the fact, that we overlook pathological conditions easy of diagnosis because we do not happen to think of them. How many times, for example, have I been groping about for a diagnosis, as bewildered as one lost in a fog at sea, but at the first sign of a fog bell knowing his exact bearings, so in the bewilderments of diagnosis I have felt reassurance the minute the right but overlooked possibility has been suggested. One pounces upon the diagnosis—every symptom in the history and physical examination will fit into and prove that diagnosis."

There is real danger of mistaking lesions of the upper urinary tract for intra-abdominal disease. W. E. Stevens[6], in an article on The Upper Urinary Tract and the Adjacent Organs, dwells at length on the possible errors in diagnosis and shows how easily one may be misled by symptoms. For example, he refers to the statement made by Bumpus and Thompson that in a series of 1001 ureteral calculi, the pain was entirely epigastric in 162. In these patients, the diagnosis of peptic ulcer had been made in seventeen, of cholecystitis in 145. Lowsley and Twinem, also quoted by Stevens, in a review of eighty-four urological cases, found that thirty-nine of these patients had previously undergone some major surgical operation without relief of symptoms. Thirty-one had had the appendix removed. Hugh Cabot[1] in 1915 reported that in a series of 153 cases of stone in the kidney and ureter at the Massachusetts General Hospital twenty-six abdominal operations had been done without relief of symptoms "which were clearly due to the overlooked calculus in kidney or ureter". The appendix was removed in ten cases.

These figures of Cabot's represented the situation at a time when urological diagnosis was less well developed than it is now, and when the urologist was consulted far less frequently. The introduction of intravenous pyelography has no doubt made such errors more infrequent, although it should be borne in mind that unless intravenous pyelograms are absolutely clear and unequivocally negative, they should be checked by retrograde pyelography.

In the differential diagnosis of lesions of the upper urinary tract and those of intraperitoneal organs, a mistaken diagnosis of appendicitis is far and away the most common error. Maurice Richardson, in the article quoted earlier in this paper and entitled "The error of overlooking ureteral or renal stone under the diagnosis of appendicitis," emphasizes the advisability of having x-rays in all cases of suspected appendicitis in which the diagnosis is not perfectly clear. Among his cases diagnosed as "chronic appendicitis" there were twenty-two in which ureteral stone was found to be the cause of the symptoms. The principal symptom which Richardson considered to be suggestive of ureteral stone rather than of appendicitis was paroxysmal, intermittent pain without constitutional symptoms. The presence of microscopic blood in the urine, he stated, always called for an x-ray.

To my mind, the chief points in the differential diagnosis of ureteral stone and appendicitis are, in the former, sudden onset of excruciating, colicky pain, the gradual shifting of this pain from the renal area to a lower site, with radiation to the groin, testicle or vulva, and the absence of true abdominal rigidity. Slow, gentle pressure will not evoke muscular spasm. Nausea and vomiting, distention and obstipation may occur with either condition. At times, however, each of these two diseases may be atypical. Ureteral colic may come on gradually, appendiceal pain may develop rapidly. Blood may be found in the urine microscopically if an acute appendix lies in close relation to the ureter. The tenderness

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and pain from a retrocecal appendix, as Goldstein has pointed out, may be most pronounced in the costovertebral region. The most definite signs of appendicitis are, I believe, true rigidity of the abdominal muscles, a rising temperature and leucocytosis.

The possibility of mistaking a fecolith in the appendix for a ureteral calculus is not too remote. Stevens mentions such a case, I saw a similar one.

One bitterly cold winter night some three years ago I was asked to go 200 miles into the country to see a patient with a stone in the ureter. I arrived about two in the morning and found a man of thirty-three years who gave this history. Three months previously he had the first attack of pain, located just below McBurney's point and nonradiating. He also complained of frequency of urination. He entered the hospital at that time, but no definite diagnosis was made. The pain continuing, he was readmitted. X-rays showed a smooth oval shadow 2 x 1 centimeters at the lower end of the right sacro-iliac joint; in different films its position appeared to vary considerably. An intravenous pyelogram showed normal renal pelves and ureters. Although the lower portion of the right ureter was not clearly shown, the shadow appeared to lie outside its probable course. Cystoscopy showed a normal bladder; a catheter passed easily to the right kidney. The patient's temperature was 99°, his white count 16,000. There was no pus in the urine. Rectal examination gave no positive findings; there was marked spasm on light pressure over McBurney's point. A diagnosis of appendicitis was made, the shadow being interpreted as that of a calcified mesenteric gland. The patient was operated upon at once; the appendix was short and thick, its base coated with a thin layer of fibrin. Impacted in the base, where it joined the cecum, was a hard mass the size of a marble, evidently a fecolith. The removal of the appendix with the fecolith left a hole one inch long in the cecum; this was closed in two layers and a wick left in the pelvis. Although I expected a fecal fistula would result, the incision healed without complication.

If any question exists as to the causation of pain in the right lower quadrant, the urinary tract should be excluded by a satisfactory intravenous pyelogram or a retrograde pyelogram. Plain films alone are insufficient, as they do not show nonopaque stones or defects in urinary drainage.

It should be borne in mind that in the early hours of an acute epididymitis the pain may be referred to the lower quadrant of the abdomen on the affected side.

Acute infections of the kidney, before pus appears in the urine, may simulate intraperitoneal disease. This is especially true of the coccus infections—renal carbuncle and acute suppurative nephritis—, less true of acute pyelonephritis.

Less acute renal lesions, such as stone, pyonephrosis, hydronephrosis and tumor, may cause symptoms which on superficial examination suggest disease of the gallbladder or stomach. Goldstein[2] says, "Many cases of renal infections and renal tumor, as well as the largest percentage of renal ptosis, were presented for examination with the symptoms of nausea and vomiting." Cabot in his series of 153 cases of renal and ureteral stone found pain referred to the stomach and accompanied by vomiting in three instances.

Two cases in my experience illustrate this symptom-complex.

D. E., a man of sixty-eight, was referred to me because of a mass in the right upper quadrant. His chief complaint was loss of weight and strength; for six months he had had a slight constant nausea but had not vomited. Once, three or four years previously, he had passed blood in his urine. The feature of greatest interest to us is that for the preceding few months he had been under treatment for alleged stomach trouble, although gastric x-rays were negative. At the time the writer saw him, he had a mass in the right upper quadrant; a right pyelogram showed complete obliteration of the renal pelvis; the kidney, which was removed by the transperitoneal approach, contained a renal cell adenocarcinoma. The duodenum was adherent to the kidney, so that it had to be peeled off. Although the growth had invaded the perirenal fat, it had apparently not involved the pedicle or the juxta-aortic glands. The patient's appetite increased and his nausea was relieved for some months. He died of recurrence two years later.

Mrs. B.—a woman of sixty-seven, had suffered from stomach trouble for twenty years. At least once a day she vomited. Eight years ago a gastrointestinal x-ray study was negative; there was a question of stone in the right kidney then. The patient occasionally passed blood in the urine; for the past two years she had had an uncomfortable feeling in the right flank. Recent x-rays of the alimentary tract were negative, but a definite shadow was seen in the right kidney. Cystoscopic study showed a badly infected and almost functionless right kidney, which upon removal demonstrated that the kidney tissue was largely replaced by fibrolipomatosis. Following operation the patient's gastric symptoms disappeared.

In addition to those cases in which the symptoms caused by a lesion of the upper urinary tract are ascribed to intraperitoneal pathology, we find all sorts of combinations due to extension of malignant disease from one group of organs to another. Two recent autopsies at the Massachusetts General Hospital illustrate this situation. In one, a cancer apparently originating in a bronchus had invaded the kidney and ureter on the opposite side, causing ureteral obstruction and urinary infection. The other had a carcinoma of the descending colon which had invaded the renal pelvis with radial extension into portions of the pyramids and cortex.

Ureteral obstruction, with secondary dilatation of the renal pelvis and upper ureter, occurs in a large percentage of patients with cancer of the uterine cervix, and in certain cases of ovarian cancer.

An excellent paper by Henriksen[3] of Johns Hopkins summarizes some recent articles on this complication. He quotes Faerber, who found in 150 patients dying of cancer of the cervix, ure-

teral involvement in eighty-four cases (56 per cent), while in 108 cases (72 per cent) the kidneys showed damage. Bilateral hydronephrosis was present in fifty-five cases, unilateral in forty cases, pyonephrosis in twenty and pyelitis or pyelonephritis in nineteen. Shields Warren[8] found renal involvement to be the cause of death in one third of the cases autopsied by him. Williams noted hydronephrosis in over eighty-five per cent of the patients with the disease who came to postmortem. Kraul considered uremia to be the cause of death in fifty per cent of the cases studied by him.

A case in this group in which the renal condition was the outstanding feature was that of Mrs. M. She was sent to me because of recurring chills and fever and pain in the left flank. Pyelography showed a definite stricture of the left ureter, five centimeters above the bladder. As dilatation of the stricture failed to relieve the patient's symptoms, the left kidney was removed; it showed a definite pyelonephritis. On pelvic examination a soft cystic mass, thought to be an ovarian cyst, was felt in the left side of the pelvis. After her nephrectomy, the patient's condition improved and she went away for the summer. Upon her return, she complained of abdominal pain and loss of weight and strength; pelvic examination showed the mass to have increased markedly; there was free fluid in the abdomen. She was operated upon and extensive malignant disease primary either in the left ovary or in the uterus was found. Without much doubt the ureteral stricture had been due to this.

A symptom which would seem unlikely to lead one along false trails, but which occasionally does so, is hematuria in women. Women are not always sure whether the source of bleeding is the genital or the urinary tract. W. E. Stevens mentions a case in which the patient herself thought the blood came from the vagina, whereas it really came from a carcinoma of the bladder. Some years ago I saw a similar case in which an excellent surgeon had done a curettage because of bleeding thought to be from the uterus. The bleeding continued and was found on cystoscopy to come from a cancer of the bladder.

The coexistence of bladder lesions with carcinoma of the cervix is well recognized but frequently overlooked. Henriksen says, "The appearance of urinary symptoms in patients known to have cervical carcinoma is sufficient indication for a thorough examination of the urinary tract before exposing the patient to either surgical or radiological procedure." Band and Wade have described six definite stages of involvement of the bladder from anterior extension of the tumor: "(1) elevation of the bladder floor; (2) fixation of the bladder floor; (3) circulatory changes, as recognized by congestion or petechial hemorrhages; (4) formation of a transverse ridge; (5 and 6) malignant invasion, displaying its presence in the form of an ulceration, of hypertrophic nodules or of a vesicovaginal fistula."

The close relationship between other conditions of the female pelvis and urinary symptoms has been well covered by W. E. Stevens[7]. He states that frequency of urination is the most common urological symptom due to gynecological pathology; in a series of 913 patients referred to the gynecological and to the urological clinics at Stanford University urinary symptoms due solely to pathologic conditions of the generative organs were present in about twenty-five per cent of the gynecological cases, while twenty-two per cent of the urological cases had concomitant gynecological symptoms or pathology. Salpingitis, according to Stevens, is the most common gynecological condition requiring differentiation from pathology in the urinary tract. Pressure from the pregnant uterus or from uterine fibroids may cause disturbance of the bladder function. Cystocele may be responsible for incomplete emptying of the bladder; the cystitis due to infection of this residual urine cannot be cleared up until the underlying cause is removed. Prolapse may cause hydro-ureter and hydronephrosis.

The possible complications in this field of surgery are too numerous to describe; the point is that before operating upon a gynecological condition for relief of urinary symptoms, one should be sure that the cause of these symptoms is not primarily in the urinary tract. Particularly important is the examination of the urethra, for in many women whose urine is perfectly normal the urethra is the *fons et origo mali.*

Diverticulitis of the sigmoid may cause complications in the lower urinary tract. An inflamed diverticulum may adhere to the fundus of the bladder; suppuration ensues and is followed by the formation of a vesico-intestinal fistula. Even without as definite a relationship as this, diverticulitis in the male may be a factor in causing symptoms which appear to be of prostatic origin. Frequency and dysuria suggest the prostate as their cause, whereas it is the colonic irritation which is the trouble. Symptoms are referred to the prostate when that gland is really not at fault.

One could continue indefinitely to catalog those signs and symptoms which lead the diagnostician away from the true origin of the disease. Hyperparathyroidism as the cause of renal stone, malignant deposits in brain, neck, chest or long bones giving the first intimation of a cancer of the kidney, urological manifestations of lymphoblastoma, sacro-iliac strain as the cause of bladder symptoms, and calculi impacted in the lower ureter as the cause of sacro-iliac pain —examples of all those conditions could be given. The urologist should bear in mind the possibility of the coexistence of lesions outside

the urinary tract as much as the general surgeon should consider the likelihood of lesions within it.

Complications due to errors of technic. In this category we find chiefly injuries to the ureter or to the bladder occurring in the course of a pelvic operation. I have seen a number of instances of this, sometimes occurring during operations by excellent surgeons. Injuries to the ureter consist in ligation, incision of the ureteral wall or complete cutting of the ureter. It seems not unlikely that unilateral ligation of the ureter may occur fairly often; the kidney atrophies without much ado and no one is the wiser.

A year ago I saw a woman who had had an appendectomy after which she had a persistent right pyelitis. Pelvic examination showed an indefinite induration in the right side of the pelvis. Two years before that, pyelograms were normal. Five weeks after operation she came under my care; pyelography showed a definite stricture of the right ureter just below the pelvic brim. At first it was difficult to pass the stricture, but once a catheter had been passed, the stricture dilated readily and eventually the pyelitis cleared up. Whether the ureter was accidentally ligated, which is hard to believe, was compressed by retroperitoneal inflammation, or whether the appendix was blamed for symptoms really due to the ureteral stricture, I cannot say.

Some fifteen years ago I saw in one week two women in whom both ureters were ligated during hysterectomy. One was seen four days after operation. She had voided but one ounce of urine. Catheterization of the ureters showed both to be entirely obstructed about five centimeters above the bladder. Bilateral nephrostomy was done at once. Three weeks later both ureters were exposed and found to be constricted to mere fibrous cords. The strictured areas were excised, the ureteral ends cut diagonally and united end to end. Catheters were passed to both kidneys, a procedure which I believe was not necessary. The patient made a good convalescence and nine years later catheters were passed easily to both kidneys. Specimens of urine showed bacteria but only an occasional pus cell. This patient is still living, eighteen years after operation. The other patient was not so fortunate. Her uterus had been removed because of cancer; she died of this disease within two years. In her case the ureters were ligated close to the bladder; in attempting to restore their patency, following a bilateral nephrostomy, I was forced to reimplant them in the bladder. The right anastomosis held, but a urinary fistula arising from the left ureter persisted. In another woman hysterectomy was followed by persistent pyelonephritis. Catheterization of the left ureter showed an obstruction at the pelvic brim. Nephrostomy was done, followed by an attempt to restore the patency of the ureter. Apparently the latter had been partially divided; there was an abscess about the ureter, the upper segment was thickened and dilated. The ureter was united by telescoping the smaller lower segment inside the dilated upper segment; this restored the ureteral function for a time as was proved by the passage of indigo carmine from the ureteral meatus. The patency of the ureter did not persist; catheters could not be made to pass the stricture and nephrectomy was eventually done.

In still another case during a vaginal hysterectomy the right ureter was nicked but not severed. A ureterovaginal fistula persisted, but closed after a catheter had been passed up the ureter and left in for forty-eight hours.

If such an accident is recognized at the time of the operation, a catheter should be left in the ureter and adequate drainage for possible leakage provided. A Levin tube may be used; the tip should be passed to the renal pelvis, the other end to the bladder. The end in the bladder can be extracted by means of a cystoscopic rongeur forceps. If the ureter is completely severed, the operator should immediately reestablish the channel by drawing the upper segment into the lower segment by a suture at two opposing points of the cut end; three fine catgut sutures should be placed to attach the tip of the lower segment to the wall of the upper segment. If it is feared that the ureteral lumen will be temporarily obstructed, a small catheter may be passed to the renal pelvis through an incision in the ureter above the anastomosis. Sisk[5] advises end-to-end suture about an indwelling ureteral catheter.

Accidental incision of the bladder wall during a pelvic operation should be closed by two rows of infolding sutures, and the bladder drained by a urethral catheter.

Unavoidable complications. Without question the most frequent of these is postoperative retention. In women more than in men this complication is likely to result in a period of urinary infection, the bladder first, then one or both renal pelves being involved. After ten days or two weeks the process quiets down, leaving the patient with an irritable urethra or a chronic bacilluria. I doubt if catheterization is, or need be, responsible for this infection. The fault lies in too little, not too much, use of the catheter. Patients are allowed to become overdistended; the bladder, suddenly emptied of thirty or forty ounces of urine, becomes congested and vulnerable to the few bacteria which are unavoidably introduced. If nurses were taught to spend less time scrubbing their hands before catheterization, and more time in irrigating the bladder after catheterization, fewer complications would arise. Any non-irritating sterile solution, such as potassium permanganate 1-8000, may be used. The patient should be given methenamine by mouth in fifteen grain doses every eight hours, or intravenous methenamine, grains thirty-one, every twelve hours.

In male patients, unless the retention seems likely to be temporary, it is often better to fasten a catheter in the urethra than to practice intermittent catheterization. This is particularly true in patients who have been subjected to removal of the rectum; the wide dissection of the pelvis may interfere with nerve fibers going to the sacral plexus and produce a bladder paralysis which will last sometimes for weeks. In these cases cystoscopy shows a gaping internal sphincter similar to that seen in tabetics. As many of the patients in whom removal of the rectum

is done are in the prostatic age, there is always the possibility that prostatic hypertrophy is at least partially responsible for the retention. If this is the case, the prostate may be removed either suprapubically, perineally or by transurethral resection. In view of the fact that the patient has been through a severe operation, the last method would seem to be particularly appropriate.

For the orthopedic surgeon, an interesting complication is the formation of renal calculi in patients who have been confined to bed for long periods with ununited fractures. These patients are sometimes given a diet rich in calcium to promote union; the excess of calcium in the blood from this source and from the absorption of lime from the skeleton which goes on during periods of inactivity is largely responsible for the formation of urinary calculi. Such a case occurred at the Massachusetts General Hospital and was reported by Barney:

> The patient was under treatment for ununited fracture of the femur and had been taking two quarts of milk a day, a diet rich in calcium, and calcium lactate. Bilateral renal calculi were discovered after the patient had been under treatment for six months. Twelve days after x-rays showed these stones, the left kidney was operated upon. No stones were found. The patient then said that since being x-rayed he had passed quantities of sand in his urine. He was followed for six months, at the end of which x-rays showed no shadows in either kidney. This unfortunate complication does not occur very often, but the possibility should be borne in mind. The administration of vitamin A in such cases and acidification of the urine may be of value as a preventive measure.

Another complication which we may classify as unavoidable is the formation of vesicovaginal fistula during parturition. Since these fistulae are usually linear tears through relatively healthy tissue, with no loss of substance, there should be a good chance of closing them at the first attempt. Closure becomes more difficult with each successive operation. The best time to operate upon these fistulae would seem to be as early as the patient's general condition will permit, perhaps within two weeks after delivery. The most severe tear that I have seen ripped the bladder neck between the urethra and the right side of the pubic arch, allowing the urethra to fall over to the left side and leaving a wide opening into the bladder. This tear was repaired three weeks after delivery and healed by first intention.

The most difficult fistulae to repair are those resulting from slough caused by radium used in the treatment of cervical carcinoma. In these patients the tissues about the edge of the fistula are so devitalized that their healing power is greatly impaired; the loss of tissue and the fixation of the bladder base are other factors which prevent approximation of the edges of the fistula. In these cases ureteroenterostomy is the only solution.

Radium burns of the bladder following treatment of cervical cancer which are not severe enough to cause fistulae may be responsible for great suffering. The most stubborn cases are those which develop years after the application of radium; in a woman whom I have been seeing the ulceration developed nine years afterwards. The process, according to Dean, is due to an endarteritis of the vessels in the bladder base; some factor, probably infection, supervenes and the mucosa of the bladder base, its resistance lowered by impoverished blood supply, breaks down into a sloughing area upon which lime salts are deposited.

These are but a few of the urologic complications which may be encountered by the general surgeon, the orthopedist or the obstetrician. Each one of these complications deserves more discussion than our time will permit, but I hope that the subject has been presented with sufficient fullness to illustrate the point that I wish to make. That point is, that no specialty is complete in itself; that every specialist must first of all be a well-trained diagnostician, cognizant of the general principles of medicine and surgery; that he must be ready to ask for help from specialists in other branches whenever he encounters a problem not limited to his own field.

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NEW HAMPSHIRE MEDICAL SOCIETY

FOREIGN BODIES IN THE AIR AND FOOD PASSAGES*

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ENDOSCOPY is a general term covering inspection of the larynx, trachea, bronchi, esophagus, and any cavity of the body by the endoscope. In this paper we will attempt to cover some of the most important points dealing with foreign bodies in the bronchial tree and esophagus. They are removed by the procedures known in medicine as bronchoscopy and esophagoscopy. This is a specialized branch of surgery adapted to the strictest examination of the tracheobronchial tree and esophagus for the purpose of extracting foreign bodies, diagnosis and treatment of diseases of the air and food passages. These examinations are carried out with a rigid tube that has special sources of illumination located at either or both ends of the tube.

In 1804 Bozzini[1] invented "The Light Conductor", an apparatus for looking into the various canals of the body. His efforts were considered to be those of a charlatan and quickly met with disapproval. Twenty-five years later Babington[1] devised a simple mechanism called a "glottiscope". This consisted of a mirror and tongue depressor combined, but its use was limited to a small number of cases and it was never accepted as an important aid in medicine. In the year 1854 Manuel Garcia[1], a musician, became interested in the larynx. With the aid of two mirrors he examined his own larynx. Eleven years later he read a paper before the Royal Society of London under the title "Physiological Observations on the Human Voice." Turck and Czermak[1] popularized the use of laryngeal mirrors.

In 1890, A. Kirstein[2], of Berlin devised a method of direct laryngoscopy which he called "autoscopy". In 1897 he described tracheoscopy by inspection through the glottis exposed to view by his method. That same year Gustan Killian[3] demonstrated the feasibility of passing straight and rigid tubes through the glottis into the tracheobronchial tree. He also showed that these tubes could be used for inspection when illuminated by the Kirstein headlamp, a specialized arrangement attached to a headband. In 1897 he removed a foreign body from the bronchus of a living child.

In 1898 the first bronchoscopy worthy of name was done in this country by Algernon Coolidge, Jr.[4] at the Massachusetts General Hospital, using an open urethroscope, a head mirror and reflected sunlight. Through an already existing tracheotomic fistula he removed a piece of hard rubber cannula from the right bronchus of a man, aged twenty-two.

By July, 1902 twenty cases had been reported in which foreign bodies had been removed by bronchoscopy. Einhorn devised an esophagoscope the same year that is similar to the one in common use in this country today.

The search for foreign bodies in cases where they were or were not present, led to the discovery of lesions existing in the air and food passages and the consequent application of medicaments. Thus the search for foreign bodies was a forerunner of diagnosis and therapeutic measures previously not in use. In one of the largest clinics in the world specializing in this field of work it has been estimated that only two per cent of their work is for foreign body extraction, while the remaining ninety-eight per cent is comprised of diagnosing existing lesions and the treatment of them.

Since the time of Killian the instruments and technique have been so tremendously improved that this branch has won an important place in modern surgery. Before proceeding farther, mention should be made of Dr. Chevalier Jackson[5] of Philadelphia, who has done more in connection with all branches of this work than any other person or persons. His efforts have been tireless in presenting to the profession his profound knowledge and observations obtained from thirty years of practice along this line as well as devising some of the most efficient apparatus for this type of work.

If bronchoscopy and esophagoscopy were more widely used, many unsuspected and obscure lung and esophageal troubles would be revealed, a large percentage of which respond favorably to treatment.

In order to obtain good results one must undergo specialized training and have experience. One must work in close collaboration with the general physician and an x-ray specialist, as well as have the coöperation of carefully trained assistants. Teamwork is essential for successful results. Ninety-eight per cent of cases of foreign bodies are reported as cures.

All bronchoscopes and esophagoscopes of practical value have been straight and rigid tubes. To be otherwise would defeat the purpose of observation of existing lesions. Most of the work is done at the end of a long tube

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and in a narrow passage, necessitating monocular vision. The chief differences in the various forms of instruments have been in the methods of illumination. Dr. Jackson's instruments, which I believe are most widely used in this country, have distal illumination, while the Bruning instruments used in Europe have proximal illumination. This is not the place for a discussion of relative merits of the two types. For removal of particular foreign bodies, many specialized types of forceps have been devised, and one must constantly bear in mind the possibility of damage by instruments and by the withdrawal of a foreign body.

We are interested today primarily in cases of known or suspected foreign bodies in the air or food passages, but endoscopy is by no means limited to this type of case. According to C. H. Thomas[6] the indications for bronchoscopy are as follows: Foreign bodies in the lung, bronchiectasis, persistent purulent expectoration, lung abscess, tracheal or bronchial obstruction, unexplained dyspnea, unexplained cough, massive lung collapse, lung conditions simulating chronic tuberculosis without demonstrable tuberculous infection. To this list Dr. Chevalier Jackson[7] adds that the "asthmoid wheeze" heard at the mouth instead of over the chest wall, and the typical signs of obstructive emphysema are nearly always pathognomonic of an endobronchial foreign body.

Thomas[6] lists the contraindications as follows: aneurysm, high blood pressure, advanced cardiac disease, chronic nephritis, active pulmonary tuberculosis and a moribund patient.

The indications for esophagoscopy are as follows: The presence or suspected presence of a foreign body, impaired laryngeal motility except in cases of aneurysm, and any abnormal sensation in swallowing. The contraindications are more or less the same as for bronchoscopy.

Usually neither bronchoscopy nor esophagoscopy is an emergency procedure, and it is extremely essential to obtain a careful history, paying particular attention to minute details. Lyman Richards[8] states that oftentimes a history of aspiration is available, but must be obtained from the parents of a child. Unless the physician, having the possibility in mind, questions them closely a valuable clue may be lost. A general physical check-up should be completed with appropriate laboratory tests. Upper respiratory passages should be examined, with special attention given to dental sepsis, and corrected when possible. An x-ray should be taken in every case of suspected foreign body, even though the suspected substance is not dense enough to cast a shadow, as lesions may be revealed by the x-ray indicating the location of a foreign body which itself does not appear. For localization, plates from various angles are oftentimes necessary, and fluoroscopy with barium is often indispensable for determination of esophageal conditions and their location. When time permits, the patient should be prepared as for any operation. It must be remembered that the patient is more or less immune to organisms that he himself harbors, yet infections introduced may be extremely virulent, so surgical asepsis is to be desired. In general, most of our cases have been done with avertin anesthesia. This does not seem to deaden the cough reflex which is a very essential factor for the prevention of complications. During the narcosis with avertin there is usually no increase in bronchial or salivary secretions. Our cases experienced no nausea or vomiting and the patients usually retain no recollection of events. I might add that opiates are not used in conjunction with the anesthesia or afterwards, because of the desirability of retaining the cough reflex to aid the clearing of the passages.

The most important part of the introduction of these instruments is the position of the patient, who may be sitting or recumbent, but in either case the position of the head and neck is relatively the same, and a trained assistant to hold the head is necessary. In all of this work, mouth, pharynx, esophagus or trachea must be brought into a straight line, not by crowding the tube but by proper position. This is obtained by extension of the head at the occipitoatlantal joint and not the whole neck extended. One may enter the esophagus instead of the larynx. This error can be detected by failure to receive the tracheal blast and by the appearance of the walls of the passage. Roughness is to be avoided and the tube should not be extended beyond the area of vision. By using a suction apparatus or swabs, the passages are freed of secretions.

The initial symptoms of a foreign body in the tracheobronchial tree are usually choking, gagging, coughing, wheezing, hoarseness, dyspnea, cyanosis and croupiness, or symptoms may be entirely lacking. There may be a quiescent period followed by pronounced respiratory symptoms plus general toxic effects. Physical signs in the chest change with bronchial movements and the shifting of secretions. In a case of obscure bronchitis, one should think of a foreign body. Nonobstructive metal objects afford few symptoms and few signs for weeks or months, then later show evidence of suppuration. Vegetable matter such as peas, peanuts, beans, etc., cause violent reactions at once such as toxemia, cough and irregular fever. The character of the foreign body often changes. If metal it may become partially oxidized, if vegetable matter it may be broken into pieces. Foreign bodies usually produce early changes in the mucosa, such as edema, granulations and increased mu-

cous secretion. Metal foreign bodies are usually easily detected by x-ray plates. Occasionally, however, they may be hidden by lung shadows, or are, themselves, too small to cast a satisfactory shadow. Early bronchiectasis, due to the presence of a foreign body, is usually cured by bronchoscopic removal of the exciting cause.

Seventy per cent of foreign bodies enter the right bronchus because of its increased diameter and less acute angle of deviation from the line of the trachea. Of course the position of the patient during inspiration and pulmonary movements may influence the ultimate resting place of the foreign body.

Therapeutic measures of shaking the patient by the heels with the head lowered may be successful in the first few minutes before the foreign body has passed the glottis.

The principal symptoms of esophageal foreign bodies are difficulty or discomfort in swallowing. The localization of pain is very indefinite, as patients not infrequently refer the sensation to a point at some distance from the site where the foreign body is lodged. Small bones are especially liable to be lodged in or about the tonsils, or in the pharyngeal wall. Complete esophageal obstruction is usually due to a large bolus of meat. A. J. Wright[9] in the *Journal of Laryngology and Otology,* March 1934, writes that "pain on swallowing, or its increase after twenty-four hours or so, makes the presence of a foreign body extremely possible". In neglected cases, esophageal perforations are the rule, leading to disastrous results. Cummings[10] noted that about seventy per cent of foreign bodies found in the adult esophagus were in cases wearing dentures. These people have difficulty with bones especially and often swallow them.

A large percentage of foreign bodies in the esophagus are demonstrable either by the x-ray plate, fluoroscopy, or fluoroscopy in conjunction with the use of barium.

The blind method of passing esophageal bougies or probes, attempting to dislodge foreign bodies or to dilate esophageal constrictions is only mentioned to be condemned.

One must not lose sight of the fact that preexisting esophageal lesions may be first evidenced by the lodgment of a foreign body at the constriction caused by the lesion.

Most large esophageal foreign bodies are caught in the region of the cricopharyngeus muscle.

I would like to review briefly a few of the cases that we have had, illustrating some of the points that have been mentioned.

(Slides were shown.)

CASE 1. A. J., aged three years, was brought to the hospital August 2, 1933 because of difficulty in breathing, supposedly of five days' duration. Further questioning brought out the fact that this symptom had been present for several months. Temperature 104°, pulse 120, respirations 25 on admission. Examination of the chest showed breath sounds absent throughout the lower left chest. Dr. Stewart thought of foreign body possibility and advised x-ray of chest.

(Slide shown.)

Foreign body was removed August 4, 1933. The patient had more or less of a stormy course and was taken from hospital against advice August 12, 1933. Condition improved. August 25, 1933 he was brought in for a check-up. Admission was advised because of varying temperatures. Discharged September 6, 1933, greatly improved. Recent reports indicate that he is well.

(Slide shown.)

CASE 2. E. C., aged six years. Chief complaint, wheezing. One week previously while playing with a paper clip in mouth, he seemed to have swallowed it. He was taken to a doctor who told the parents not to worry, that it would pass through the intestinal tract, or to wait until something developed as a result. At the time of the accident there were considerable coughing, dyspnea, and cyanosis for a few minutes. His mother became worried and brought him to the hospital for a chest x-ray. On admission November 17, 1933, temperature 100°, pulse 100, respirations 20. The child did not seem acutely ill.

(Slide shown.)

Foreign body was removed November 17, 1933. The patient was discharged November 20, 1933.

CASE 3. M. D., aged three years and 8 months. Brought to the hospital and admitted June 24, 1933. Four weeks previously, while quarreling with her sister, aspirated a peanut. Some coughing at the time. One week later began to wheeze. A nurse diagnosed asthma. No dyspnea or cyanosis. Three days before admission developed what seemed to be a cold. Temperature 98°, pulse 130, respiration 25.

(Slide shown.)

Foreign body, half a peanut, removed June 25, 1933. The patient was discharged July 6, 1933.

(Slide shown.)

CASE 4. H. B., aged sixty-one years. Admitted August 21, 1933 complaining of discomfort and difficult swallowing. Onset while eating chicken.

(Slide shown.)

Foreign body, chicken bone, removed the same day. Discharged the following day.

CASE 5. B. D., aged fifty-seven. Admitted February 10, 1934. Complaints: choking off and on past three years. Loss of 12 lbs. weight during winter. Day before admission was unable to get solid food down, because of sudden obstruction. Considerable distress in chest, such as pain and pressure. Small amount of liquid would pass at times. Physical examination and Wassermann negative.

(Slide shown.)

February 14, 1934, esophagoscopic examination revealed a large bolus of food lodged in the middle third of the esophagus. This was removed and a small tumor was seen projecting from the posterior wall. A biopsy taken was reported to be a carcinoma. Deep x-ray therapy given. Returned a few days ago for a check-up. No symptoms or evidence of obstruction.

CASE 6. H. B., aged seventy years. Admitted April 20, 1934. Unable to swallow. Pain in the chest. Twenty-four hours previous to admission the patient coughed while eating. Since then, unable to swallow food. Liquids passed down slowly.

(Slide shown.)

A large piece of meat attached to a bone was removed the same day. The patient was discharged the following day.

(Slide shown.)

In conclusion I would like to add that foreign bodies left or undiscovered in the lungs or esophagus, will ultimately produce disastrous results, and I hope that we have brought out the necessity of further examination in obscure pulmonary and esophageal conditions.

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[Dr. Coyle and Dr. Sycamore then showed many slides on the screen, both interpolating discussions on the subject of Bronchoscopy.]

DISCUSSION

PRESIDENT LORD: I will call upon Dr. Robert M. Deming of Glencliff to discuss the subject of Bronchoscopy.

DR. ROBERT M. DEMING: *Mr. President and Members of the Society*—I feel that I can add but little to this interesting talk by Dr. Coyle, since he has covered the subject quite thoroughly. My interest in bronchoscopy is from a purely clinical viewpoint, as I am not experienced or interested in the technique of the procedure.

A clinician is interested in bronchoscopy as a means of differentiating various conditions, which may be present in the chest. Chief of these is bronchiectasis, a condition much more common than was previously thought, and frequently diagnosed and treated as pulmonary tuberculosis, even in sanatoria.

Bronchoscopy, combined with lipiodol injection and x-ray, should make a diagnosis. It is valuable in detecting and diagnosing chronic nontuberculous lung infections; fibrosis of the lung or silicosis; abscess of the lung for drainage, provided the abscess is not located too far up; for obtaining material for a biopsy; to differentiate and definitely diagnose tumors of the lung or bronchi.

One of our patients is now having a bronchoscopy and lipiodol injection to determine whether she has a papilloma of the bronchus with resultant plugging of a bronchus. It is used quite spectacularly in removing foreign bodies. The cardinal indications for diagnostic bronchoscopy are the clinical or x-ray evidences of bronchial obstruction, and in no connection is this more valuable than in early diagnosis of bronchial carcinoma.

The use of the bronchoscope is limited, or should be, to special operators, since the procedure is not carried out without danger of some damage to the trachea and lungs.

When a patient presents a varying amount of nonproductive, or only moderately productive cough for a long period, occasional hemoptysis in varying amounts, from streaking to large hemorrhages, persistently negative sputa, and roentgenograms that are inconclusive, but which give evidence of a difference in density of the lung fields, indicating distention of the upper lobe on the affected side, and as an inequality in the position of the diaphragm best seen in the lateral roentgenogram, it is reasonable to suspect an atelectatic bronchiectasis of the lower lobe. A bronchoscopy with lipiodol injection should then be of the utmost value.

PRESIDENT LORD: This paper is now open for discussion, and I know that we are all interested in this business of making inspection of the interior.

DR. LOUIS C. AGER: There are three points that I want to mention One of them is rather interesting historically. I have never seen it mentioned in any published discussion of bronchoscopy.

In the late eighties,—I think it was about 1888,—Dr. Rushmore, Professor of surgery at the Long Island College Hospital, had the following case:

A prominent clergyman of Brooklyn was playing with his children and insufflated a small cork which lodged in a bronchus, with the usual inflammatory results. He came into Dr. Rushmore's service in the hospitals and various measures were tried. Dr. Rushmore had the idea of extracting with a corkscrew. After various attempts at manufacture, a flexible metal tube was constructed with a slit to permit respiration in the opposite lung. This was inserted into the bronchus and into it was run a long flexible corkscrew. That the cork was actually reached was proved by the fact that a piece of cork was broken off and recovered. However, the patient died of pneumonia, or perhaps atelectasis. Later the professor exhibited the tube and cork to his medical students of whom I was one.

Another matter that I wish to mention is the work of Dr. Stitt of Cincinnati over a considerable length of time while I was stationed in the Cincinnati Office of the Veterans' Bureau. No doubt most of you have seen his reports, but I wish to verify the fact of his very satisfactory results in lung irrigation with a hypertonic salt solution. I saw several severe cases of bronchiectasis,—some in very old people,—tremendously relieved. One man told me that he had not been able to go to bed for two years but, after a few treatments, he was able to get several hours' sleep at a time in bed. I wish some of the bronchoscopists here in New England would make use of the method. We have a good many cases of bronchiectasis among the Veterans.

One other observation. We have had in the Hospital at Rutland Heights, for some time, a patient with evidence of pulmonary tuberculosis. His chief trouble, however, has been sudden severe attacks of vomiting during eating with severe pain in his chest. X-rays were made without showing anything until he had a typical severe spasm of the esophagus just as he was swallowing the barium. It showed up wonderfully.

PRESIDENT LORD: Is there further discussion on this paper?

DR. H. O. SMITH: In the town adjoining mine, a schoolboy in good health, aged ten years, began to develop a slight cough and to lose weight. The tentative diagnosis was incipient tuberculosis. Finally, he developed an acute process in the lung, with high fever, pain, profuse expectoration. I made a diagnosis of lung abscess. An x-ray was taken and it was found that he had in one of the small bronchi, a carpet tack. The child was taken to the Children's Hospital. Dr. Richards removed the tack under general anesthesia. The boy went to his home and the cough gradually ceased. He put on weight, and now is a typical, healthy, country boy.

PRESIDENT LORD: Is there any further discussion?

DR. FRANK N. ROGERS, Manchester: X-ray does not always help, although I agree with Dr. Smith that x-ray pictures should be taken of all suspected cases of tuberculosis and cases of foreign bodies in the larynx. Peanuts will not show up in x-ray. The history of such a case is about the only thing we can go by.

I had a case, some years ago, of peanut bronchitis, which ended fatally, although the child lived for a long time after having the peanut removed, but due to the traumatism of getting the peanut out the child had to wear a tube.

It is a bad habit for a young baby, or a young child, to eat peanuts. Peanut butter is all right, but peanuts themselves are dangerous.

Nut bars are always dangerous to the very small child. The package of popcorn contains a prize and usually a little metal figure, just about the size that would enter the larynx. I, personally, wrote to the manufacturers of these articles and warned them against using these prizes.

DR. RICHARD W. ROBINSON: *Mr. President and Gentlemen*—I won't take but a minute of your time. The gentlemen who have been talking about this subject have been speaking of bodies that are distinctly foreign, that come from the outside. A little incident that occurred a few days ago I think is perhaps of some importance so I will mention it.

A thirteen months' old baby developed an acute lung condition, and this was diagnosed by x-ray, as a lung abscess. There were several days of illness, when finally, the child coughed up a little piece of material, brownish in color, that looked like half a bean, which on observation under the microscope and from chemical test, proved to be a solid milk curd that the youngster had evidently inhaled after vomiting. I wonder if this sort of accident is not quite frequent and whether it might not account for some of the acute lung conditions of infancy.

PRESIDENT LORD: If there are no further remarks, I will ask Dr. Coyle to close the discussion.

DR. JOHN A. COYLE: *Mr. President and Gentlemen of the Society*—We attempted to cover briefly, only some of the work on foreign bodies. Sometime, perhaps, we may present treatment of bronchiectasis and give some credit to individuals that have done a great deal of work along this line. I thank you.

PRESIDENT LORD: Do you wish to comment, Dr. Sycamore?

DR. SYCAMORE: No, I have nothing to say.

CARE OF THE NEWBORN*

BY RICHARD S. EUSTIS, M.D.†

THE two specialties of obstetrics and pediatrics overlap. The obstetrician is interested in the infant, the fruit of his skill and the mother's labor. His is the task of aiding him into the world and his is the task of resuscitation if the baby fails to breathe spontaneously. The pediatrician's interest is in the baby's immediate condition and in the stored-up reserves of fats, minerals and of vitamins on which he is partly dependent for the first months of life. These reserves, in turn, depend upon the health and diet of the mother.

We were taught that the full-term fetus had obtained from his mother all that he needed to start life for himself, even though in so doing he seriously depleted her reserves. The observation that the newborn infants of anemic mothers were not themselves noticeably anemic seemed to support this theory. More recent reports, however, have shown that such infants are definitely anemic at the age of three months, and it is evident that because of the maternal lack they were unable to obtain an adequate reserve of iron.

The dentists associate poor development of the first dentition with deficiencies in the maternal diet more than with defective diet during infancy.

If this is true of iron and calcium it is probably true of all the mineral salts.

It is for these reasons that pediatricians urge that the diet of pregnancy should include an abundance of mineral salts and of Vitamins C and D both of which appear to be necessary for the proper metabolism of bones and teeth. The other vitamins are probably present in sufficient amount in any reasonably well-balanced diet.

The rise of pediatrics as a specialty focussed attention on the newborn infant and the early articles on the care of the newborn emphasized the importance of maintaining a normal body temperature of 99°-100°F. and of minimizing the weight loss. These points are less important than we once thought. More recent work has shown that the rectal temperature of a healthy infant is anywhere between 97° and 99°F. and that attempts to force the body temperature above 99° are apt to cause indigestion.

In the first few days after birth an infant loses from five to fifteen per cent of his birth weight. This loss is chiefly water and need not

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concern us if in other respects the infant is vigorous and well.

We try to practice moderation while waiting for the infant to develop his own powers. He must be kept warm, but not too warm. He must be given fluid enough to prevent dehydration, but not so much that he is uninterested in nursing. Hunger and thirst are the best stimuli for sucking, just as eager sucking is the best galactagogue.

Our usual routine in the care of the newborn is as follows:

BATHING

As soon as respiration is well established, the newborn baby is wrapped in warm blankets, placed in a warm room, and left alone for several hours. If his condition is good, he is then given his first bath. With sick infants, this should be postponed even for one or two days. During the bath, the nurse is trained to look the baby over for any abnormalities that may have escaped the doctor's attention at the time of delivery. Following the bath, he is anointed thoroughly with 2 per cent ammoniated mercury and sent to the nursery. We have found it advisable if the temperature is subnormal to admit the infant to the air-conditioned premature nursery for one or two days until his temperature becomes stabilized.

TEMPERATURE OF NURSERY

Most hospital nurseries are too warm. A hot room is necessary only when the infant is exposed, as during the daily oiling. At other times the air temperature should not be over 70°F. Greater heat is apt to mean poor ventilation and a very dry air which causes excessive evaporation from the skin and mucous membranes and increases the risk of respiratory infections. Also, if the baby is too warmly dressed or in too warm a nursery, the moist skin becomes macerated and forms a favorable field for impetigo and furuncles. The ideal nursery is kept at about 70° and has a treatment room attached to it which may be kept at 75° to 80°. If only one room is available, the high temperature should be permitted only during the time the babies are being oiled and weighed.

Overheating of infants is undoubtedly also a frequent cause of indigestion and diarrhea. We have known for a long time that this was the cause of many of the summer diarrheas, but Blackfan's work with air-conditioned nurseries has shown that it may also be a cause of diarrhea at any time of the year.

BREAST FEEDING

The crusade in favor of breast feeding by the public health experts should be applied to individual cases with discretion. It is perfectly true that for the mass of the population, the death rate is distinctly lower among the breast-fed babies. It is also true that breast feeding takes less time, and is easier and cheaper.

Except in the presence of definite contraindications, most mothers can nurse their babies if they want to. If they do not want to, it is a waste of time to struggle with them. However, if after a reasonable trial, the breast milk is insufficient or if the otherwise normal baby is not gaining satisfactorily, it is only common sense to wean. Mixed feeding after the first month does not work out well in practice.

The infant is put to breast after the first twelve hours, and every four hours by the second day. Until the milk comes in, he should not be left at breast for more than a few minutes. The purpose of this preliminary nursing is to give the baby colostrum, to stimulate milk formation, and to get the mother and baby used to each other. This latter factor is particularly important with a first baby.

There is considerable dispute as to whether the infant should be given water, sugar solution, or even a formula from the bottle during this period of two to five days before the milk comes in. On the one hand are the men who are impressed with the dangers of excessive weight loss and dehydration fever. They advise fluid from the bottle for all infants, and some have gone so far as to order definite amounts at definite hours. Dehydration fever has been rare under this treatment, but the proportion of successful nursing has been comparatively low.

The most effective method of minimizing the initial loss of weight is to give the baby normal saline solution containing 5 per cent glucose. This causes fluid retention and a fairly level weight curve on the chart, but we cannot see that an excess of fluid in the tissues is of any real advantage to the baby. After a few infants developed a generalized edema, we abandoned the use of the glucose saline mixture.

When fluid is offered to check weight loss, whether it be water, sugar solution, or a formula, the infants come to breast fairly satisfied, find nursing a hard job, and lie back waiting for food from an easy running bottle. The mothers complain that their babies won't nurse, their breasts are not satisfactorily emptied, and the milk supply gradually diminishes.

At the opposite extreme is a school which says the infant should never be given a bottle until breast feeding is given up. The percentage of successful breast feeding in such cases is higher but there is no doubt that unintelligent application of the rule may cause trouble.

We believe the wiser of the two courses is to start infants on a routine of nothing by mouth except the regular breast feedings. If this régime is followed, it is very necessary to watch their weights daily, the condition of their skins,

their general vitality and their nursing ability. Most infants will come through successfully, but individual cases will need small amounts of water or sugar solution to prevent dehydration. If a formula is necessary to start them gaining, it usually means that nursing will not be successful.

FEEDING INTERVAL

Regularity of feeding has been preached by pediatricians since the beginning of that specialty, and many reasons have been advanced for its necessity, such as the limited gastric capacity and the three-hour emptying time of the stomach. Nevertheless, the chief advantage of regularity seems to be that only in this way can the mother plan her time. There is no doubt that when the milk supply is abundant, the baby healthy, and the mother always available, an infant which is nursed whenever it cries for food, does just as well as an infant that is fed by the clock. But regularity is always necessary in a hospital and usually at home, and therefore the wisest schedule for the mother is the one with the fewest number of feedings on which the infant does well. We find that a four-hour schedule works out successfully in the vast majority of infants. This is true even of premature babies weighing as little as three pounds. There is an occasional infant that will have to be fed every three hours because his stomach will not hold enough to carry him the four-hour period. Such cases are recognized because although they go to sleep immediately after each feeding, they wake up and cry an hour before the next meal is due.

Most of the milk at a feeding is obtained during the first three or four minutes, but this first milk is comparatively low in butter fat and it is the latter part of the nursing that contains the most cream. This is the reason that the baby is allowed to nurse each breast eight to ten minutes when both breasts are given, and fifteen to twenty minutes when one is given. When we are trying to increase the milk supply, we give both sides at each feeding, thereby increasing the number of times each breast is stimulated during the twenty-four hours. Occasionally, it is necessary for a time to give both sides every three hours, but such frequent nursings are likely to cause cracked nipples.

We can suspect an insufficient milk supply by the baby's apparent hunger, by his failure to gain, and by small scanty stools. The only conclusive proof, however, is to weigh the infant before and after each feeding for twenty-four hours. It is not sufficient to weigh after one or two feedings only as the amount obtained at the individual nursings may vary widely although the twenty-four hour amount is steady from day to day.

If the baby's condition is reasonably good, we should not be alarmed by his failure to gain during the first ten days or even two weeks, and we should not allow the desire of the parents and grandparents to lead us to introduce a formula until it is necessary. Frequently the full milk supply is not established until the mother is about ready to get up and if we have had the courage to wait, we will find that the infant will start gaining.

An overabundant milk supply is not common and is usually only a temporary matter. It is suggested by a gaining but uncomfortable baby with regurgitation and frequent stools and is best handled by shortening the time at breast and giving only one side at a feeding. If the mother is uncomfortable an icebag will check the secretion of milk.

BOTTLE FEEDING

Successful bottle feeding, even with the simplified methods in use today, demands a certain minimum of intelligence, equipment and medical supervision, and unless these are available, every effort should be made to keep the baby at breast. But where these conditions can be met, there is no doubt that a satisfied, gaining, bottle-fed infant is happier and more completely nourished than an underfed infant at breast.

When a baby is to be fed from the beginning on a bottle, we wait the customary twelve to twenty-four hours until he is rested and hungry, and then offer first one half to one ounce of water or sugar solution, and four hours later, the first formula. He will probably take from one to two ounces of formula at each feeding, that is, on the usual four-hour schedule of six feedings, he will take from six to twelve ounces in twenty-four hours, increasing gradually to three ounces at a feeding or eighteen ounces in twenty-four hours.

Fashions in formulae are nowadays very simple, but they still leave room for considerable individual choice on the part of the physician. This individuality seems to be mostly on the doctor's part, for at the Boston Lying-in Hospital the babies have done just as well since we have adopted a stock formula as they did before on various different mixtures.

Our usual formula is now—

Boiled Milk	12 ounces	— 240	calories
Karo	1 ounce	— 120	"
Water to	18 ounces		
		360	"

This supplies 20 calories to the ounce, which is the same as the average breast milk.

The formula can be made equally well with unsweetened evaporated milk, using six ounces instead of twelve.

Other sugars can of course be used in place of the Karo. Equivalent amounts are

Cane Sugar	2	level tablespoonfuls
Milk Sugar	3	" "
Dextrimaltose No. 1 or No. 2	4	" "

Eighty-three per cent of the babies at the Boston Lying-in Hospital were breast-fed during 1934. The remainder, even the premature infants, have done well on this stock formula.

One of the chief reasons for this excellent record lies in the nursing staff. The supervisors and head nurses know how to handle babies and are able to impart their art to the constantly changing pupil nurses. To feed an infant skillfully and well, without causing colic or excessive regurgitation, is an art in some ways comparable to that of the animal trainer. The expert nurse shows the same confident approach and handling, the same understanding of expression and of inarticulate sounds. Confidence begets confidence, and nervousness, nervousness, although the apprentice instead of being kicked, clawed or bitten, merely risks being drenched with vomitus and kept awake by a crying baby.

The care of the newborn infant includes the early recognition and proper handling of the sick infant. Suggestive signs are an unstable temperature, a weak or high-pitched cry, poor color, poor nursing ability, and either lethargy or increased irritability. Such infants, from the nursing standpoint, should be handled as if they were premature, and the doctor should examine them carefully, having in mind the various diseases of the newborn period. Fever is as apt to mean overheating, dehydration, or intracranial hemorrhage, as infection; and infection may be present with a normal temperature. Also, the white blood count in the newborn period may be as high as 20,000 without indicating infection.

Although this is not the time to enter into a discussion of the diseases of the newborn, there are a few points in our handling of some of the conditions that are worth mentioning.

In cases of apnea and cyanosis, we first clear the airway of mucus by suction through a catheter passed into the pharynx, and then give gentle artificial respiration with the infant in the crib. Oxygen and 5 per cent carbon dioxide is administered through a large celluloid cone which covers the whole head and shoulders.

In intracranial hemorrhage, we first treat shock and then give an intravenous transfusion of one to two ounces of citrated whole blood. If the intracranial bleeding has been due to hemorrhagic disease, as it may be without visible bleeding elsewhere, this should stop the bleeding. If, on the other hand, the hemorrhage is from a torn vessel, we think the advantage of the increased coagulability of the blood induced by the transfusion more than outweighs the theoretical risk of a slightly raised blood pressure.

Lumbar puncture is performed after the infant has rallied from shock and preferably early in the stage of increased irritability before convulsions develop. Its purpose is twofold, to confirm the diagnosis and to relieve the symptoms of increased intracranial pressure. The fluid is usually either frankly bloody or xanthochromic, according to the amount and location of the bleeding and is under increased pressure. We find manometer readings of the pressure are of some value in deciding the amount of fluid to be withdrawn and in determining the time of the next puncture. One puncture is enough in some cases, others require two or three at intervals of twelve hours to one or two days before symptoms are relieved.

Any external bleeding in the first few days of life which is not immediately controlled by ligation or by simple pressure, is presumptive evidence of hemorrhagic disease, as is also the vomiting of blood, either fresh or black, or the passing of bloody stools. The only exceptions we make are a blood-streaked, mucous discharge from the vagina which in our experience is almost never associated with bleeding elsewhere, and the vomiting of small amounts of blood by an otherwise perfectly healthy baby where the source of the blood can be traced to a crack in the mother's nipple.

Transfusion is the only really effective treatment for hemorrhagic disease of the newborn. Intramuscular injections of whole blood will control some cases, but they are not effective for several hours, probably eight at least, and during this waiting period irreparable damage may be done by internal hemorrhage. I do not believe it is justifiable to waste any time with intramuscular injections of whole blood or of other coagulants unless transfusion is for some reason absolutely impossible.

Between one and two ounces of blood is withdrawn from the vein of one of the parents, mixed with citrate solution, and injected into a scalp vein or one of the jugular veins of the infant. We have not found it necessary during the newborn period to group or match the bloods. This sort of transfusion sounds simple, but is really a fussy, delicate procedure, best done by an interne or recent graduate from a children's hospital. I think it wiser to bring the baby to such a man rather than to try a bungling job myself.

There have been a few cases reported of successful transfusion during the first three days by loosening the umbilical tie and introducing the needle into the open end of an umbilical vein. Although we have never had occasion to try this, I have kept it in mind as a possible method in case of the failure of the more usual routes.

The important point to drive home is that nurses should report at once any bleeding or any sudden pallor which may indicate internal

bleeding and that a transfusion should be performed as soon as possible after the presumptive diagnosis is made. Only in this way can we avoid a high death rate.

Erythroblastosis is a new name given to a previously unrecognized condition which lies part way between the very serious icterus gravis neonatorum and the comparatively mild anemia of the newborn. The suspicions of the obstetrician should be aroused by the golden yellow color of the vernix and by the hypertrophied placenta. Such infants show a progressing anemia with many nucleated red cells indicating that the young cells are being swept into the circulation. They are usually jaundiced and may develop edema and enlargement of the heart. They should be transfused at once and the transfusion should be repeated as often as is needed until blood destruction and blood production are normally balanced, which may be a matter of several weeks.

Thrush is a recurring pest of hospital nurseries. It appears occasionally in spite of the most scrupulous cleanliness of bottles and nipples as well as the most careful wiping off of all overhead surfaces from which dust and spores may fall. We have tried many treatments, and our best results have been obtained by painting the tongue and inside of the mouth with a 1 per cent aqueous solution of gentian violet. Two or three applications at daily intervals usually suffice.

Impetigo in the newborn is a very different disease from that appearing in childhood or adults. It is just as annoying and has more serious possibilities. It may be defined as a contagious, superficial infection of the skin, caused usually primarily by a streptococcus, resulting in the formation of thin-walled blebs which are very easily ruptured. The resulting denuded area presents an oozing surface and tends to increase in size by peripheral extension. It is very difficult to draw a sharp line between a mild, simple impetigo in the newborn and the bullous impetigo or pemphigus neonatorum which results in such extensive blistering and denuding of the skin that the death rate is very high.

For the prevention of impetigo we have found the best plan to be a thorough inunction with a 2 per cent ammoniated mercury ointment immediately after the initial bath. Following this, the baby is neither bathed with water nor, except rarely, anointed again with the mercury ointment during his stay in the hospital. Instead he is oiled daily with a mildly antiseptic neutral blend of vegetable and mineral oils. We do not believe that this oil alone, without the preliminary inunction, is adequate prophylaxis, but with the combination of the two, we have distinctly reduced the number and severity of the cases of impetigo.

If an infant develops a characteristic bleb or denuded area, he should be rigidly isolated from the rest of the nursery. The most effective treatment seems to be the use of drying lotions and exposure of the affected part under an ordinary electric light bulb. Ointments and strong disinfectants should be avoided. One or two applications of metaphen followed by the frequent sopping on of whitewash and the electric bulb treatment work best in our hands. It is very important to keep the infant cool, as heat and perspiration tend to macerate the skin and aid in the spread of the infection.

MISCELLANY

THE APPOINTMENTS OF MR. JAMES A. HAMILTON

Mr. James A. Hamilton, Superintendent of the Mary Hitchcock Hospital of Hanover, N. H., has accepted the position of Superintendent of the Cleveland City Hospital as of July first, as well as the position of Professor in the Graduate School of Business at Western Reserve University.

DO YOU KNOW?

"Colds" are not due to cold weather—Eskimos do not have them unless they come in contact with white men.

"Vitamin" means "life-carrier."

More than 700,000 different insects have been named and described by scientists.

Most parents are so busy training children in such good habits as eating regularly that they fail to help them form the habit of liking people. Development of this characteristic will often prevent fussing about food, temper tantrums, lying, disobedience, jealousy and many other bad habits which cannot be easily corrected by direct injunction.

Sleep ought to be measured carefully: different individuals have widely varying needs in the amount of sleep required. Loss of sleep for one or two nights can be made up, but habitual loss of sleep will eventually break down the most rugged system.

Thomas Adams said: Prevention is so much better than healing.

—*Bulletin, Public Relations Bureau, New York State Medical Society.*

MASSACHUSETTS MEDICO-LEGAL SOCIETY

A STUDY IN FEIGNED MURDER*

BY JESSE W. BATTERSHALL, M.D.†

THE morbid philosophy of Schopenhauer that contemplates life as a personal attribute and self-murder as the justifiable destruction of it, happily is now discredited as unmoral. Self-killing is condemned by the Church as moral outlawry and by the State as an indefensible yet obviously unpunishable infraction of its law.

Among the noticeable circumstances attending the current economic distress is the appalling increase in deaths by suicide. From a reported total of 459 suicidal deaths in 1925, the Massachusetts records indicate a yearly increase to a high peak of 639 deaths in 1932 with only a minor decrease in the last two years. Banning from present consideration, suicides, impelled by the fanciful and unreal concepts of the seriously disordered mind, and viewing the residuum impartially as the exercise of individual volition, the resultant is not an agreeable one.

The urge to self-murder has its origin in a multitude of circumstances. Humiliation, ripening into profound depression or morbidity after continued deliberation on fancied social or business losses to follow, is a common albeit unhappy cause. Disheartening disappointments following untoward developments in scholastic effort, frustrated plans for social or financial advancement, thwarted hopes or disillusion in love, these and many other circumstances often provoke emotional crises that in turn are the geneses of impulses to destroy life; so, too, of our national business life in these times of stress. Indeed, from the pages of business history we may cull accounts almost without number of gruesome deaths, self-inflicted, and instigated by financial instability and economic distress.

In many of these cases, the self-destruction is plotted with marked premeditation. Plans are made with infinite care. Religious interdictions cast upon the self-killer, the necessity of surrounding his act with the appearance of accident or even death at the hands of an assailant, to the end that religious rites are not denied, and that no stigma should enure to his family. Again, the skeptical eye of the insurer approaches the presentation of a claim for death loss, with an inquisitorial attitude, searching among the attendant circumstances for some fact, however isolated or insignificant it may appear to the untrained observer, by which to refute a claim of accidental death and its attendant double indemnity relief.

Still other considerations, as variable as the persons themselves, may often lead the suicide to long, deliberate planning. In short, the suicide contemplates his act with a view to the simulation of a real accident, and with a purpose to thwart the exposure of the truth in future inquiries. Upon those charged with official investigation of violent deaths, in the first instance, there must necessarily fall the heavy burden of weighing the revealed facts, to discern the true from the simulated, and to pass with frank impartiality upon the accumulated evidence.

A suicide, remarkable for the nicety of its detailed planning, came to my attention in 1931. The body of Mr. X, a professional man of high standing in a small manufacturing town in southeastern Massachusetts, was found in the early morning, lying on the floor of his garage, in the basement of his home. A passing schoolboy, glancing through the open garage doors, was attracted by the headlights of an automobile, inadvertently left burning when the machine was parked in the garage. The frightened boy ran home and told of his ghastly discovery and a relative hastily summoning Mrs. X, went with her to the garage, by way of the kitchen stairway which led to the basement; there the inert body of Mr. X was found lying between two parked automobiles, parallel to the running boards of the cars. Neither motor was running. On the floor by the body of Mr. X there was found a bankbook with eight endorsed checks ready for deposit, together with a slip specifying $400 in cash. No cash accompanied the checks or book, however, and none was found in the vicinity. On the other side of the body, close to the running board of the second car, Mr. X's empty wallet was found and a few papers and a negligible amount of small change lay close by the wallet. Superficial examination of the body revealed a bullet wound with its entrance directly over the cardiac area on the left anterior chest wall with a sharply demarcated area of blackening around the wound. There was also some tattooing noted. The course of the bullet appeared to be upward. The clothing disclosed burning and powder residue. It was evident that the firearm had been discharged at close range. There were no signs of a weapon nearby, and all outward appearances indicated a murder induced by robbery. The premises were minutely searched for approxi-

*Read before the Massachusetts Medico-Legal Society, October 2, 1935.

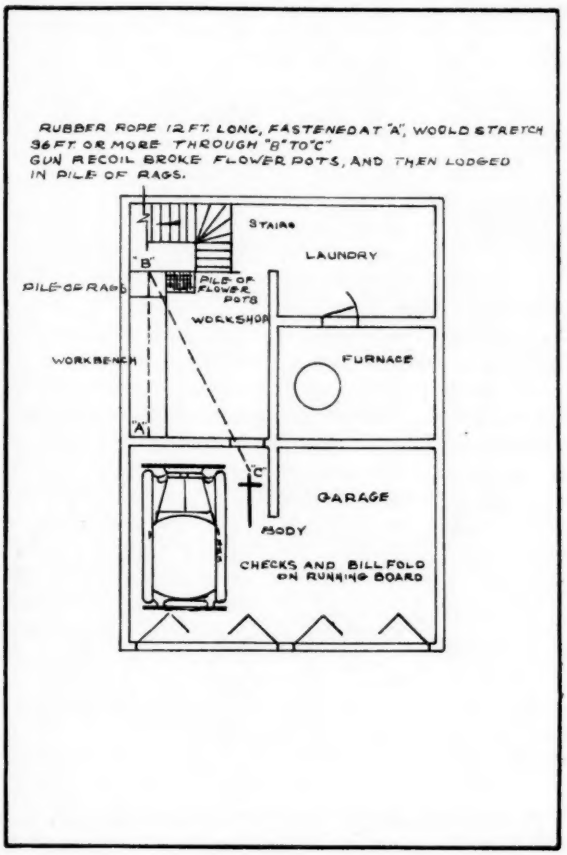
†Battershall, Jesse W.—Medical Examiner, First Bristol District, Massachusetts. For record and address of author see "This Week's Issue," page 700.

mately three hours, and finally a .32 calibre revolver was found and later identified as the property of the deceased. This came to light in a workshop about ten by twelve feet in area adjoining the garage. It was tied securely to a piece of rubber cord with heavy hempen cord which showed signs of having been broken and retied. The rubber cord was one half inch in diameter and sixteen and a half feet long; placed over the revolver there was a cardboard cone, its base at the muzzle and its apex at the handle. Theoretically it seemed that the base of the cone was to be placed in close apposition to the body to deaden the report of the discharge, and also to prevent powder burns on the hands. The rubber cord ran around the leg of Mr. X's workbench, through a cotton pillow and burlap bag, and along the undersurface of the bench through a series of holes made through supports under the top of the bench for a distance of about 12 feet. It could not be seen unless the observer was directly under the workbench. It developed that this cord could be stretched into the garage to a point where the body was found, a distance of some thirty-six feet. The existence of this ingenious contrivance was revealed by a humble flowerpot that lay freshly broken near the corner of the bench. In the investigation which followed it appeared that Mr. X, on the morning of his death, had already transacted some business with a client at the latter's home, and had returned to his own home a few hours before the discovery of his body. Mr. X was rational, showed no evidence of mental upset at the time of this transaction and, on the contrary, appeared to be jovial and in good spirits on leaving his client who apparently was the last person to see him alive.

As the inquiry went on, startling facts began to appear. Mr. X was heavily insured and policies provided for double indemnity in case of accidental death. He was financially involved and was being pressed by creditors for payment of his several outstanding obligations. His home was heavily mortgaged.

On completion of the investigation it was officially decided that Mr. X came to his death by suicide. Evidently the deceased assumed that on the discharge of the revolver with the attendant entry of the bullet into his body, his muscles would relax and that the revolver attached to the elastic cord, would fly back into the workroom and conceal itself in the cotton pillow and burlap under the bench, thereby hindering, or possibly preventing discovery. However, in passing through its return course, the weapon struck the flowerpot which deflected it and this prevented its entire concealment. (See diagram.)

The ingenuity and knowledge of the suicide often unite to dispel the appearances of self-imposed death. It is frequently his aim to create an out-of-ordinary atmosphere, purposely to mislead. The result is that, commonly, the devices employed are unique in design and the method of procedure seems apparently novel. Yet it can be said only rarely that both the device and plan are original. The case under consideration illustrates this. Although it seems quite unique in design and completion, this case is paralleled by the suicide of a Midwestern farmer who shot himself outside his barn and



whose pistol was found under the barn attached to a piece of rubber which had drawn it to its hiding place. Gross[1], records what is believed to be the first case of this sort, and which occurred in Vienna toward the end of the last century. And in fiction, the lovable Sherlock Holmes finds the solution of a gripping mystery in the discovery of the lethal weapon in the river into which it had been hurled by a contrivance similar to the one here employed.

None will deny that the ultimate determination of the reason for these gruesome tragedies often depends on the true discernment of the value of seeming insignificant facts. No fact is too subtle or too minor to be unworthy of notice. There is no such thing in these cases, as too many facts. Investigations must be painstaking, persistent, and if you will, even painfully thorough.

REFERENCE

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THE GOLDEN AGE OF MEDICAL ENDOWMENTS

BY HENRY A. CHRISTIAN, M.D.*

DURING the three decades, 1900 to 1930, medical education in the United States of America was supported increasingly bountifully by gifts for endowment and immediate use; rich men gave extremely generously for improvement of medical education, for increased facilities, for investigation of medical problems and for larger and better hospitals in which to care for the sick.

All parts of our country received such gifts, some parts more bountifully than others, but in no section were such gifts small in amount. Practically all medical schools had their financial resources greatly augmented. The actual plan of management and teaching in vogue in the medical schools seems to have influenced gifts but little; actually very various types of organization are found in these medical schools that were helped so generously; gifts to improve medical science and medical practice by enlarging the financial resources of medical schools and hospitals came, apparently in spite of, rather than because of, form of organization; it made but little difference whether hospitals were related to medical schools or not; everywhere money came. The period 1900 to 1930 was one of unprecedented giving to all aspects of medicine.

A study of the budgets of a group of fifteen representative medical schools shows the increase in financial resources, and so how little influenced by form of organization and by geo-

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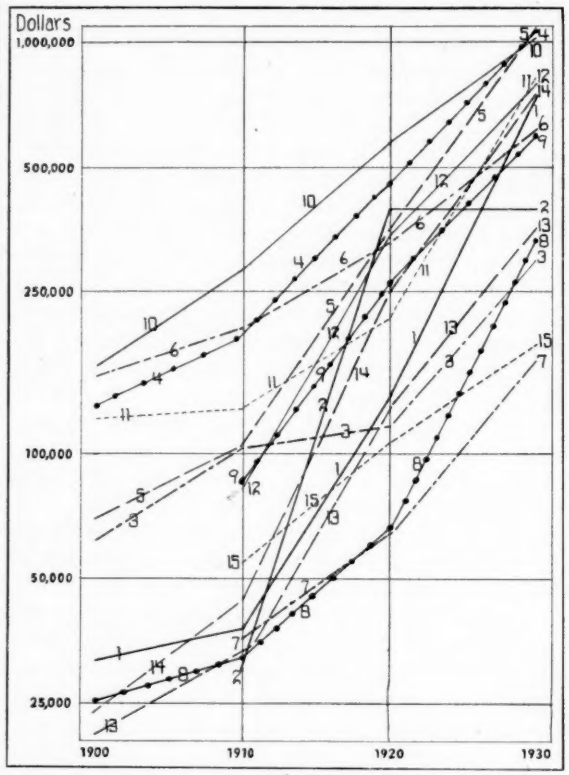

CHART 1 shows ratio of the budgets of fifteen medical schools (1900-1930) illustrative of the data of table 1.

TABLE 1

Medical School No. 1		Medical School No. 5		Medical School No. 9		Medical School No. 13	
1900	31,367	1900	70,084	1910	85,867	1900	20,633
1910	37,091	1910	106,463	1920	259,868	1910	32,224
1920	134,144	1920	353,629	1930	593,225	1920	131,321
1930	715,056	1930	1,160,354	Increase nearly 6 fold		1930	347,652
Increase 22 fold		Increase 15 fold				Increase 16 fold	
Medical School No. 2		**Medical School No. 6**		**Medical School No. 10**		**Medical School No. 14**	
1910	30,000	1900	153,758	1900	164,074	1900	23,831
1920	387,000	1910	201,384	1910	279,915	1910	45,295
1930	387,000	1920	326,188	1920	568,177	1920	253,104
Increase 11 fold		1930	600,075	1930	1,010,384	1930	754,048
Medical School No. 3		Increase 3 fold		Increase nearly 6 fold		Increase 31 fold	
1900	61,500	**Medical School No. 7**		**Medical School No. 11**		**Medical School No. 15**	
1910	102,920	1910	35,204	1900	122,191	1910	54,350
1920	116,468	1920	64,659	1910	131,157	1920	105,320
1930	291,992	1930	167,628	1920	217,368	1930	182,255
Increase almost 4 fold		Increase almost 4 fold		1930	830,164	Increase 2¼ fold	
Medical School No. 4		**Medical School No. 8**		Increase nearly 6 fold			
1900	131,455	1900	24,998	**Medical School No. 12**			
1910	197,788	1910	31,748	1910	81,838		
1920	435,521	1920	65,916	1920	334,006		
1930	1,128,826	1930	325,000	1930	776,002		
Increase nearly 8 fold		Increase 12 fold		Increase over 8 fold			

graphic distribution. What has happened to the annual budgets by decades from 1900 to 1930 in these representative medical schools is graphically presented in chart 1, which, be it noted, is on a ratio basis wherein equal vertical increments correspond to equal proportional increases in expenditure. For five schools no budget is shown until 1910. Medical school No. 14 has had proportionately the greatest augmentation of budget (thirty-one fold); No. 1 comes next in increase (twenty-two fold). No. 13 and No. 5 rank next with increases of sixteen and fifteen fold respectively. No. 10 began in 1900 with the largest budget, increased six fold and was outstripped in total budget in 1930 only by medical schools No. 4 and No. 5. Medical schools Nos. 4, 5 and 10 in 1930 had budget expenditures of over $1,000,000.00, while medical schools Nos. 1, 11, 12 and 14 spent between $715,000.00 and $830,000.00 each. Table 1 shows the actual budgetary expenditures of each school for 1900, 1910, 1920 and 1930 and the proportional increase from 1900 to 1930. The geographic distribution of these schools was as follows: two in the New England States, three in the North Atlantic States, one in the Mid-Atlantic States, two in the Southern States, five in the Mid-Western States and two in the Pacific States.

The thirty years from 1900 to 1930 comprised the golden age of medicine, so far as financial support was concerned. The past few years have shown a shrinkage of assets and curtailment of expenditure; not infrequently very serious retrenchments have been necessitated. None can foresee the future, but it seems very probable that the day of great gifts for medicine is over; certainly this will be true for many years to come. Will governmental support replace private endowments and gifts? What will be the results of such a change? Here is a serious problem, whose satisfactory solution will demand the best thought of medical men. This is a challenge to those now just commencing activity in medical schools and hospitals; they will be the ones to solve this problem.

LIFE EXPECTANCY

According to Dublin and Lotka, in their book on "Length of Life", during the Roman Empire a baby's expectation of life was between twenty and thirty years. One hundred years ago in England it was forty years. In the United States it is now fifty-nine years for boys and sixty-two years for girls.

Dr. Alexis Carrel, Nobel laureate in medicine and otherwise famous, interjects an unpleasant thought for people of the third decade in a report to the *New York Times* expressing the opinion that a middle-aged individual has less chance of reaching eighty than his grandparents had.

He claims that resistance to fatigue, sorrows and worries has decreased and that modern men easily break down. He advocates a new type of scientist whose functions should be to concentrate on the study of human problems.

"HEALTH FOODS" AND DRUGS SEIZED BY PURE FOOD OFFICIALS

Stocks of "health foods" on sale at Washington, D. C., and Boston, were examined in February by inspectors of the Federal Food and Drug Administration, and six items found in violation of the law. They were labeled so as to give the impression that they were foods possessing special remedial properties. The Administration says they were mixtures of various food and non-food ingredients, and had no greater nutritive value than ordinary foods. Furthermore, in some of them there were medicinal ingredients which, in the view of enforcing officials, have no rightful place in anything sold as food.

The available stocks were seized on charges of misbranding. The charges as to each item are explained as follows: "Correcol", a mixture of mucilaginous seeds similar in characteristics to psyllium, with gum karaya (a vegetable gum), was labeled as a "colon food", although neither ingredient had any food value. It was further claimed that the product would set up normal intestinal activity, which was beyond its capabilities.

"Hauser Potassium Broth", made of dried seaweed, alfalfa, okra, potato starch, beet and rhubarb leaves, contained nothing especially warranting its name, according to the allegation. The ingredients provided no more potassium than can be obtained in the normal wholesome diet. A representation that the article was a "health product" was similarly held unwarranted.

"Slim", which the manufacturer called "a delicious non-habit forming beverage", was in reality a mixture of senna, orange peel, anise, bladder wrack (a seaweed), buckthorn bark, dried apple and centaury flowers. The Administration flatly charged that this product, containing mostly medicinals with only one true food ingredient, was not a beverage. Also, claims for the reduction of weight were held to overreach the worth of the mixture, which could have a laxative effect only.—*Bulletin, U. S. Department of Agriculture.*

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

FOUNDED BY RICHARD C. CABOT, M.D.

TRACY B. MALLORY, M.D., *Editor*

CASE 22141

PRESENTATION OF CASE

A thirty-five year old white American garage owner was admitted complaining of pain in the chest.

The patient was perfectly well until four years before entry when he began to suffer from a steady aching pain in the arches of both feet. There was no reddening but there was said to be some slight swelling and tenderness. The duration was not recorded. He continued his daily activities and shortly afterward began to notice some dyspnea on exertion. This continued with gradually increasing severity. About a year later while in bed the patient had his first attack of chest pain. The pain was localized to the region of the left nipple and was associated with profuse perspiration. No other details were noted. About this time he began to be "quite nervous" and visited a physician who immediately referred him to a cardiologist. He was given digitalis and nitroglycerin but had no further attacks for several months. At this time precordial distress began to recur with increasing frequency. The pain now radiated down the anterior surface of the left arm to the wrist and was associated with profuse perspiration and palpitation. Relief was obtained fairly promptly by the administration of one to three nitroglycerin tablets. About a year before entry he was compelled to discontinue work because of the pain which now occurred several times daily. The distress was often not associated with either exertion or excitement. It continued to occur daily for the three succeeding months, which he spent in bed, but evidently the attacks were lessened in severity and frequency. For the remainder of the period up to his admission he led a bed-and-chair existence. An occasional short walk was permitted but this invariably precipitated an attack. He took as much as a grain of morphin without relief of pain. Gradually the frequency again increased until he suffered twelve to fifteen episodes daily, often while at complete rest and frequently awakening him from sleep. There was no orthopnea. He developed a slight nonproductive cough about a week before coming to the hospital. He had no acute joint distress although for two years he had had occasional slight pain with movement of the left shoulder and upon flexing his fingers. During the four years of his illness his weight had decreased from 190 to 145 pounds.

He had a series of twelve operations for fistula in ano done twelve or fourteen years ago.

Physical examination showed a coöperative young man complaining of pain under the left clavicle. There was profuse perspiration. The skin showed ashen pallor. The apex impulse of the heart was felt in the sixth interspace, 13 centimeters from the midsternal line. A systolic thrill was palpated at the aorta and a diastolic at the apex. A blowing systolic and a rumbling diastolic murmur were audible in the mitral area and both systolic and diastolic murmurs were also audible at the aortic area. A pistol shot sound was heard over the femoral vessels and a faint capillary pulsation was observed inside the lips and in the nailbeds. The pulse was full, pounding, and said to be of Corrigan type. The blood pressure was 160/110. There was pain on movement of the proximal phalangeal joints of the right hand and the left shoulder.

The temperature was 98°, the pulse 100. The respirations were 20.

Examination of the urine was negative. The blood showed a red cell count of 5,140,000, with a hemoglobin of 75 per cent. The white cell count was 13,700, 65 per cent polymorphonuclears. A Hinton test was negative. A blood culture was negative. An electrocardiogram showed normal rhythm with an occasional ventricular extrasystole. The P-R interval was 0.2 of a second. The Q-R-S was .15 of a second. The Q-R-S complexes were split, and the T waves extended in the opposite direction. There was left axis deviation.

X-ray examination of the heart showed marked enlargement in all directions but more prominently downward and to the left. The aorta was not dilated. The lung fields showed diffuse mottled dullness, more marked on the left side, and increased density in the bases.

On the fourth day a paravertebral alcohol injection of the first to fourth left thoracic nerves was done after which the patient rapidly developed left pupillary, sudomotor and vasomotor paralysis in the upper portion of his body. Shortly afterward he complained of acute pain in the left chest. This was associated with some dyspnea and cyanosis, and a friction rub was heard in the left upper thorax. The pain was relieved somewhat by strapping the chest but the distress continued for about two days, after which the patient appeared to improve. An x-ray taken four days postoperatively showed some fluid in both pleural cavities and increased dullness in the lung bases. He had no further anginal attacks but suffered from paroxysmal

attacks of dyspnea. Nine days postoperatively he had pain high in the chest bilaterally which was aching in character and more severe on the left side. The pain persisted throughout the night and a friction rub was heard in the left upper axilla. On the following day the patient, whose condition had remained fair, suddenly gasped and died.

Differential Diagnosis

Dr. William B. Breed: Taking this history as it is given, it is a pretty weak description of rheumatic fever. It seems to me this story suggests the gradual onset of angina to the point of angina decubitus. Of course, at his age, without any definite rheumatic history in the past, it is a fairly good picture of cardiovascular syphilis. If, on the other hand, you take what is given you in the physical examination later on at its face value, then your point of view changes. Perhaps the description of the arches of the feet is put in to suggest that he was a rheumatic. However, I do not see how that description can be of value as a definite manifestation of rheumatic fever. You will see that he first began to have anginal pain on exertion which was relieved by nitroglycerin and gradually had to take to his bed. He had frequent attacks in bed without exertion, to a point where a grain of morphia was necessary to relieve pain. There is no episode which is described here, however, which would make us think he had a definite occlusion of any of the coronary arteries.

If this record is correct it is perfectly obvious that with a palpable diastolic thrill at the apex and palpable systolic thrill at the base in the aortic area and corresponding murmurs one must make a diagnosis of rheumatic heart disease with mitral stenosis, aortic regurgitation and aortic stenosis. Therefore, the case falls at once into the rheumatic group; also, as you will see later, the Hinton test is negative, which helps to rule out the syphilitic suggestion. He was obviously in shock from pain, with the ashen pallor and the profuse perspiration that occurs from any pain, gallbladder pain, ureteral colic, a true coronary thrombosis or from severe anginal pain.

Presumably there was no bacterial endocarditis. There was no anemia, and at least one blood culture was negative. The P-R interval was at the upper limit of normal. The Q-R-S complexes were split, with the T waves extending in the opposite direction, indicating intraventricular block, presumably left bundle branch block, which indicates severe myocardial damage, or coronary disease. One cannot tell either by physical examination or electrocardiogram whether this man ever had a definite coronary occlusion, but it does indicate that he has severe myocardial damage with angina and so presumably a good deal of coronary disease. May I ask Dr. Holmes to look at the x-rays?

X-ray Interpretation

Dr. George W. Holmes: The x-ray examination covers only a period of three days. This is one of the first films taken and it shows a definitely enlarged heart. The enlargement is almost wholly to the left and appears to be left ventricular enlargement. It is possible, of course, that the right ventricle is also enlarged but the horizontal position and general shape is more suggestive of left ventricle. In addition he has definite changes in the lung roots with thickening and mottling extending out into the lung from the roots—the appearance of stasis rather than bronchopneumonia. There is a slight increase in the width of the supracardiac shadow, if we look at the films taken in the oblique view. We have a fairly good outline of the aorta and I think we can safely say it is not dilated. If that observation is correct he probably does not have luetic or hypertensive heart disease.

We have a film taken three days later in which there appears to be considerable change in the heart during the interval but part of it may be due to a difference in the way in which the films are taken. This is a portable film and taken at a shorter distance and part of this increase in size is due to that. It does look as if the heart were a little larger, and the changes in the lung became more marked.

Differential Diagnosis Continued

Dr. Breed: Before we go into the definite cause of his death I should like to say a word about the question of when his rheumatic infection began. I doubt very much that it began four years prior to his entry, when he complained of painful arches. Such rapid progress from a mild rheumatic infection in a man of thirty along cardiac lines is very unusual. I should assume that he had had a rheumatic infection previously and that for a number of years he probably had rheumatic heart disease without symptoms. Whether the pains in his arches were due to rheumatic fever I think is entirely academic and it is of no particular value to decide that question here. He was given the alcohol injection because of angina, and I should therefore doubt that he had had an occlusion prior to this, because he probably would not have been selected for such a procedure if it had been known that he had had any amount of cardiac infarction. We know, also, that people with rheumatic heart disease are prone to early coronary disease. I think we can rule out syphilis very well. Now what did he die of? I think that is somewhat academic, too, because he did not have any particular episode lasting a few days, and the ninth day he died rather

suddenly having had some chest pain twenty-four hours previously. There are three possible causes of his death. One of them is a large occlusion, one a pulmonary embolus and another is a rent in the aorta or in the myocardium. I suppose we are expected to say one, two and three on this. The appearance of the friction rub after the pain not over the precordium but high in the left axilla is not very helpful. Just for the sake of making it interesting I will put (1) pulmonary embolus, (2) large fresh occlusion with infarction (a little rapid for that but it might be big enough) and (3) some mechanical tearing or rupture of the aorta or of the myocardium.

Clinical Discussion

Dr. Edward F. Bland: This was a very unusual case and we believe it belongs in a relatively rare group which Lewis described in part in 1931.

There are a few interesting points that were not brought out in the story. In the first place he was only thirty-five years of age when he died. He had the beginning of his arthritic symptoms at thirty-one. Prior to that he had had a number of physical examinations for insurance and his heart had been normal. Furthermore, shortly after the onset of his arthritic symptoms his heart was said to be involved and within one year of the onset of rheumatism he began to have angina pectoris; within two years he was bedridden with angina pectoris decubitus. He was referred from Ohio to Dr. J. C. White in this hospital for surgical relief of the pain. Formerly he had been accustomed to take as many as fifty nitroglycerin tablets during twenty-four hours. When he entered here we felt he had some form of active cardiovascular disease. We believed lues had been ruled out and thought it probably rheumatic in nature because of the repeated joint pains. This impression was further supported by the following findings: slight periarticular swelling around the small joints of the hands; an elevated sedimentation rate and a persistent leukocytosis; together with a P-R interval by electrocardiogram of .2 of a second. Clinically we were certain he had active rheumatic disease. This was further suggested by the atypical form of angina pectoris which he had. Lewis has fully described the syndrome. The attacks usually come at night without adequate provocation and are associated with a striking rise in blood pressure. We have observed one similar case at the House of the Good Samaritan where the blood pressure rose from 160 systolic to over 300 systolic during these attacks. They are accompanied by a sinus tachycardia of 130 to 140 with profuse sweating and flushing of the skin and considerable associated respiratory difficulty, all of which were present in this patient. Furthermore, in the milder attacks they may not have pain, but only the associated circulatory phenomena. It is only with the severe attacks that they have typical anginal pain. After the alcohol injection his angina pectoris was completely relieved but he continued to have paroxysmal attacks of the profound circulatory disturbances which had been previously noted. As to the exact cause for his sudden death, we had no adequate explanation except, as Lewis pointed out, they are prone to die suddenly.

Dr. Earle M. Chapman: What percentage of cases of proved cardiovascular lues may have a negative Hinton?

Dr. Bland: There are figures from Baltimore indicating about 15 per cent.

Dr. Mallory: That is the Wassermann.

Dr. Bland: Yes.

Dr. Tracy B. Mallory: The Hinton is certainly more sensitive; so I should think you could cut that figure in half.

Dr. Breed: Does anyone here think this man had cardiovascular syphilis?

Dr. Bland: One further point I would like to make. All of these people with this form of angina pectoris have been relatively young, all have had free aortic regurgitation and in our experience it has been rheumatic in origin.

Clinical Diagnosis

Rheumatic heart disease, aortic and mitral valve involvement.

Dr. William B. Breed's Diagnoses

Rheumatic heart disease.
Mitral stenosis and regurgitation.
Aortic stenosis and regurgitation.
Pulmonary embolus.

Anatomic Diagnoses

Subacute aortitis and aortic endocarditis—unknown etiology.
Aneurysm of the mouth of the left coronary artery.
Aortic insufficiency.
Hypertrophy and dilatation of the heart.
Chronic passive congestion.
Anasarca.
Congenital malformation of the right kidney.

Pathologic Discussion

Dr. Mallory: Let me show you first the picture of this man's aorta and aortic valve. One of the commissures of the aortic valve was cut directly through in opening the heart but the other two show clearly. Their points of attachment to the aorta appear to be much lower than normal so that the sinuses of Valsalva and the mouths of the coronaries are more evident than usual. There is no interadherence but neither is there definite separation. The cusps are markedly thickened and appear to be

stretched rather taut across the dilated ring. There are no vegetations on them. The walls of the sinuses and the first 2.5 centimeters of the ascending aorta show a pannus-like overgrowth of pink, wrinkled fibrous tissue. Only

the minutest atheromatous flecks could be made out on close scrutiny. The upper margin of involvement is irregular but very sharp and the aorta beyond is perfectly normal.

The mitral, pulmonic and tricuspid valves were all negative—not the slightest suggestion of rheumatic involvement, and their circumferences were all within normal limits. The circumference of the aortic valve was 10 centimeters, 2 centimeters above normal limits; so there could have been no stenosis of either the aortic or the mitral. Both right and left ventricles were dilated and their walls were markedly hypertrophied. The heart weighed 900 grams.

The margins of the sinuses of Valsalva are difficult to make out because of the endarteritic process but it is evident that the mouths of both coronary arteries are above them and arise from the aorta proper. The mouth of the left one was involved in a small aneurysmal dilatation, 1 centimeter in diameter and 0.5 centimeter in depth, which is not apparent in the photograph. The mouth of the right one was narrowed and can be seen as the crescentic slit just medial to the left hand commissure. Beyond their mouths both main coronaries and all their major branches were entirely negative.

Histologically the intima of the involved areas shows a marked overgrowth of fibrous tissue with little or no inflammatory infiltration. The media under these areas is invariably highly vascularized with foci of absorption of muscle cells and elastic lamellae. The penetrating vessels are often surrounded by cuffs of lymphocytes. In the adventitia the perivascular inflammatory infiltration is very marked. In other words, the picture is a textbook one for fairly acute syphilis of the aorta. Whether such a diagnosis is justified, however, is open in my opinion to real doubt. Perhaps we had best postpone the final discussion till after the next case. Microscopically numerous small foci of muscle cell absorption without leukocytic reaction were found scattered irregularly throughout the myocardium. No Aschoff bodies were demonstrated.

Outside the heart and aorta we found little of importance. There was a rather marked hypertrophic arthritis of the spine. There was, of course, moderate anasarca and marked chronic passive congestion. The right kidney was anomalous, showing no development of the upper pole.

DR. BREED: I would like to make one comment about the mitral valve. We are beginning to be willing to accept a mitral diastolic murmur before death without presupposing stenosis, but we are not as a rule willing to accept a definite diastolic thrill in the mitral area without diagnosticating stenosis. Therefore, I should like to cast some doubt on that observation. It is not easy to time thrills. Dr. Bland saw this patient, and so I should like to ask him if he is perfectly clear in his own mind that there was a definite diastolic thrill in the mitral area.

DR. BLAND: No; I agree with Dr. Breed. Perhaps it would help if I read this short description of my findings. "Cardiac sounds at the base are masked by a loud harsh systolic and blowing diastolic murmur. At the apex is a slight systolic and a moderate mitral rumble (no thrill)."

CASE 22142

PRESENTATION OF CASE

First Admission. A twenty-five year old white American laborer was admitted complaining of pain and swelling of the joints.

About six years before entry the patient began to have pains and some swelling in his feet. These persisted for about two years, at which time strapping and orthopedic treatment relieved the distress. However, for the two years preceding admission both feet and ankles became intermittently swollen and painful. One and a half years prior to entry his right wrist became swollen and motion was painful. About a year later his right heel became swollen and was quite tender. X-ray examinations showed spurring in this region. For four months before entry he had frequent pain and some stiffness in his lower back. Despite these symptoms he

continued with his work. There were occasional night sweats and slight morning cough of some two years' duration.

He had had an acute attack of gonorrheal urethritis two and a half years before entry and again a year later. Both attacks subsided promptly with vigorous medical care.

Physical examination showed a well-developed and nourished young man in no discomfort. Several small discrete nodes were palpable in the cervical, axillary, epitrochlear, and inguinal regions. The lungs were clear. The heart was not enlarged. The sounds were normal. The blood pressure was 110/65. Tenderness was elicited over the tenth, eleventh and twelfth dorsal spines. There were swelling and limitation of motion of the right wrist joint. Tenderness was elicited over the metatarsal arches and about the insertion of the right Achilles tendon.

The temperature, pulse and respirations were normal.

Examination of the urine was negative. The blood showed a red cell count of 5,500,000, with a hemoglobin of 100 per cent. The white cell count was 9,600, 55 per cent polymorphonuclears. The sedimentation rate was .85 millimeters per minute. A gonococcus complement fixation test was negative. The uric acid was 2.6 milligrams per cent. A Hinton test was negative. The basal metabolic rate was minus five. Prostatic fluid was negative for gonococcus. Gastric analysis showed free acid. A sugar tolerance test showed a normal curve.

X-ray examination showed no evidence of dental or sinus infection. There were proliferative changes about the margins of the right wrist joint. The vertebral column was negative. A gallbladder series and barium enema were negative. The lungs were clear and the heart was normal.

The patient's condition remained essentially unchanged. His course was afebrile save following the administration of typhoid vaccine intravenously and gonococcus vaccine subcutaneously, at which times he had sharp rises in temperature. He was discharged on the twenty-sixth hospital day.

Second Admission, three months later.

The patient remained fairly comfortable for two months after discharge. Thereafter there was recurrence of all joint pains in both wrists, lower back, and left sacro-iliac regions. The right heel remained persistently painful and he returned to the hospital for relief of this symptom.

Physical examination showed the patient's condition to be essentially unchanged. There was tenderness over the ninth dorsal spine with limitation of spinal movement. There was tenderness over the right wrist joint, proximal joints of the first and second left metatarsals and posterolateral aspect of the right heel.

The blood showed a white cell count of 10,800, 40 per cent polymorphonuclears and 60 per cent lymphocytes.

A bursa was removed from beneath the right Achilles tendon and the patient was discharged five days later.

Final Admission, nine months later.

Except for intermittent recurrence of pain in the various joints the patient felt fairly well and six months before returning to the hospital he worked in a hayfield for about a month. At the end of that time increasing joint pain precluded such activity. He stated that he felt a little weak thereafter but was not obviously ill until two weeks prior to reëntry. He then developed slight productive cough, palpitation and dyspnea with moderate exertion. These symptoms progressed rapidly in severity.

Physical examination showed the patient to be well nourished, orthopneic, and moderately cyanosed. His eyes were staring and there was slight fullness of the neck veins. The tongue was furred and the throat was angry red The heart was found to extend 4 centimeters to the right of the midsternal line and 10 centimeters to the left in the sixth interspace. Rough aortic systolic and diastolic murmurs were heard best in the carotids. A_2 was absent. A systolic bruit was audible in the pulmonic area, and P_2 was accentuated. A presystolic thrill and murmur were present in the mitral area. The blood pressure was 125/65. Fine moist râles were audible at both lung bases. The liver was tender and extended three fingerbreadths below the costal margin. The right wrist joint was partially ankylosed and there was swelling of the left ankle. No note of edema was made.

The temperature was 100°, the pulse 100. The respirations were 30.

Examination of the urine showed a trace of albumin but was otherwise negative. The blood showed a red cell count of 3,800,000, with a hemoglobin of 60 per cent. The white cell count was 10,500, 78 per cent polymorphonuclears. The stools were negative. The nonprotein nitrogen of the blood was 40 milligrams. Repeated blood cultures were negative. The sedimentation rate was 38 millimeters at the end of one hour. The vital capacity was 1,500 cubic centimeters. An electrocardiogram showed normal rhythm with evidence of left bundle branch block. Another gonococcus complement fixation test was negative.

X-ray examination showed a mitral shaped heart with marked pulmonary artery enlargement.

Shortly after admission a pericardial friction rub appeared. The temperature continued to be elevated and fluctuated between 99° and 102°. At the end of the second week the cardiac dullness appeared to be increased and the patient became quite markedly dyspneic. A pericardial tap afforded no relief and on

the following day, while receiving intravenous glucose, he suddenly became markedly cyanotic, went into collapse, and died shortly afterward on the fifteenth hospital day, thirteen months after the first admission.

Differential Diagnosis

Dr. Howard B. Sprague: If we leave out all the inside of this record and think of the first part and the last part, we have a boy who, at the age of nineteen, begins to have joint pains which are troublesome off and on for the rest of his life and he dies seven years later with evidence of valvular disease. This would seem to be all right for setting up a diagnosis of rheumatic heart disease. It is only when you look at the rest of the data in the record that you think this might be a diagnosis to shoot at rather than to accept offhand. I should like to know what sort of arthritis he had during these years. Apparently it troubled the people in the hospital as much as it troubles me. He certainly was thoroughly investigated so far as the etiology of his arthritis is concerned. It was apparently a proliferative affair with partial ankylosis and calcification of a joint. I do not know whether there is an intermediate type of infectious arthritis, which is the same thing as rheumatic fever, but I do feel that we see patients who have some joint changes of a permanent nature associated with rheumatic fever and who have cardiac changes, typical of rheumatic heart disease. We have come to look at such a patient on the ward from the standpoint of diagnosis in this way —we listen to the heart in order to make a diagnosis of the kind of arthritis he has. If the patient has rheumatic heart disease what he has in his joints is rheumatic fever. I am not at all impressed in the present case with the fact that the gonorrheal infection bears any clear relationship to this unless it was a further activating agent. I should like to hear from Dr. Bauer some time as to what kind of arthritis the patient had.

At his first admission he had an entirely normal heart. You can see that his various tests were entirely normal except the sedimentation rate. I take it that this was elevated, and on the second admission it was also elevated but reported a different way. He had no increase in uric acid in the blood. The Hinton test was negative. You will see that at times he was an orthopedic problem and had treatment for pains in his feet and later on he became a surgical orthopedic problem with dissection of a bursa, and other times was a straight medical problem. However, he was able to leave the hospital after this palliative operation but returned in nine months with all these findings in his heart. That is the disturbing thing, that in such a short time he could develop all this cardiac pathology. He has a rough aortic systolic and diastolic murmur which was heard best in the carotids but I take it they were also heard over the heart, and the aortic second sound was absent. That certainly suggests something wrong with the aortic valve and it is very difficult for me to believe that he could develop rheumatic aortic stenosis, which this suggests, in nine months. He had a presystolic thrill and murmur at the mitral area. Again I feel that he could not have developed mitral stenosis.

Dr. Walter Bauer: I did not think that there was a presystolic thrill. The only murmur I remember hearing was the aortic diastolic one.

Dr. Sprague: He came in this last time with more evidence of active infection. He had some anemia and his temperature rose to 102°. The question of bacterial endocarditis apparently was quite seriously considered because he had many blood cultures, consistently negative. An electrocardiogram showed left bundle branch block. Could we have some report about the x-ray, Dr. Holmes?

Dr. George W. Holmes: These are films of the chest. This is the early film and I think it shows normal heart and lungs. It is possible that there is a little widening across the auricle. It was taken at full inspiration and I think we would have to interpret it as normal. A later film, this again is not a seven foot film, probably a portable film, very much underexposed and distorted. We cannot see a considerable part of the heart outline or of the lung structure. I think this probably represents the upper border of the heart. Here is the left border, a somewhat triangular shaped heart of the type we see in mitral disease or dilatation and in addition we have the changes in the lung which go with passive congestion. I do not believe that these findings help much in the diagnosis. He has no dilatation of the aorta. That might help you some.

Was a pericardial friction rub heard? That is of importance.

There is a rough spur on the undersurface of the os calcis. I do not know that it is of any significance.

Dr. Sprague: Do you think it is significant of gonorrheal infection?

Dr. Holmes: They are said to be more common with gonorrheal infection but they also may be due to trauma.

Dr. Sprague: The statement about the pericardial tap is rather ambiguous to me.

Dr. Edward A. Gall: There was about 100 cubic centimeters, clear at first and bloody toward the end.

Dr. Sprague: The possibilities here seem to be rheumatic carditis, or an acute bacterial process. We might mention the possibility of lues in this case although the Hinton is negative and the patient is three years younger than the youngest patient with fulminating luetic

aortitis that we have had here, I believe. I do not believe that he has bacterial endocarditis due to the gonococcus. It seems to me that his gonorrheal infection quieted down and there was too much time in between for this to be an acute process from that and statistically the figures are very much against it. I believe we have not had any case autopsied here of acute gonorrheal endocarditis. Against bacterial endocarditis is the fact that we have no evidence of petechiae, negative blood cultures and essentially negative urine, and the occurrence of pericarditis. Pericarditis does occur with acute or subacute bacterial endocarditis but it is relatively rare. The signs in the heart if we are to explain them on the basis of acute bacterial endocarditis make one think that large vegetations might be present in the mitral and aortic valves which would produce, both of them, enough obstruction to suggest a stenosis of the valve. That can occur. Also, there may have been enough ulceration of the aortic cusp to result in the disappearance of the aortic second sound. The left bundle branch block could be caused by a metastatic abscess in the region of the left branch of the bundle of His or obstruction in the region of the coronary ostia, or could, of course, be due to active rheumatic carditis. On the whole I should think that the rapid progress in this case, so far as the heart is concerned, pointed to a relatively acute bacterial endocarditis without clear evidence that the several years of joint pain had resulted in any definite rheumatic process on which it was engrafted.

Clinical Discussion

Dr. Bauer: This individual did not seem to be much of a diagnostic problem so far as his joint disease was concerned until the time of his last admission. As you can see from the detailed arthritic work-up, he was thought to have arthritis. We hope some day soon we shall have sufficient data of this sort to enable us to discontinue this detailed statistical type of study.

We thought we were dealing with an individual who had proliferative arthritis or the chronic rheumatoid type of arthritis. The question of gonorrheal arthritis was raised from time to time primarily because of the fact that he had had an asymmetrical type of arthritis rather than a symmetrical type; secondly, because he did have spurs, and thirdly, because he had Achilles tendon involvement. We do know that we can see atypical rheumatoid arthritis which is anything but symmetrical, although a larger percentage of patients with the disease have symmetrical joints involved. We further know we can have spurs from other causes than gonorrhea, such as trauma. We also know we encounter calcaneal spurs in the chronic rheumatoid type of arthritis. Given an individual with arthritis and Achilles tendon involvement one should always appreciate that the two most likely things to cause such involvement are either a gonorrheal infection or gout. However, we do occasionally see Achilles tendon involvement in rheumatoid arthritis.

He was followed in the arthritic follow-up clinic as an uncomplicated case of rheumatoid arthritis. When one encounters a patient with chronic progressive arthritis of years' duration he can feel perfectly safe in betting a thousand to one that it is not due to the gonococcus. In other words, the gonococcus is not responsible for a chronic progressive type of arthritis of years' duration. It does cause arthritis which may disable a patient for weeks or months. The patient may recover without residual joint changes. In other instances the patient may recover with considerable evidence of joint change or damage in one or more joints. Once such changes have occurred subsequent use of the joints may produce a progressive traumatic arthritis. In such cases we are dealing with a traumatic or degenerative type of arthritis secondary to faulty joint mechanics resulting from the previous gonorrheal arthritis. Certain individuals have recurrent attacks of gonorrheal arthritis but in such instances the patient is symptom-free between attacks. Such patients do not suffer from a slow, chronic, progressive, deforming arthritis extending over a period of years such as we see in rheumatoid arthritis.

Dr. Sprague stated that given a patient with arthritis and rheumatic heart disease, the presence of rheumatic heart disease means that the joints are part and parcel of a rheumatic fever infection. I cannot agree with this statement. In certain instances this is undoubtedly correct; in others it is not. I do not remember what I wrote in the record at the time of this man's last admission. As I remember the case, my best guess would have been "God knows". I believe I thought that we were dealing with an individual with—I will read the notes.

"We have never been too certain of the type of arthritis present in this individual although we had previously favored a diagnosis of a specific infectious arthritis rather than rheumatoid arthritis. Although he has had arthritis two or three times we have no absolute proof that those episodes were due to gonococcus. The complement fixation tests have always been negative."

There is something missing in the history; that is, he had had two attacks of arthritis, the first attack having appeared six weeks prior to his first hospital entry.

"The question is whether we are dealing with rheumatic fever and rheumatic pericarditis in an individual who has had rheumatoid arthritis for seven years. This is very important from the etiologic point of view. Are rheumatic

fever and rheumatoid arthritis due to the same etiologic agent? At present we have no way of proving it."

The local doctor when written to could not tell us that he had found Gram-negative diplococci in the prostatic smears obtained at the time of the first attack of arthritis.

At the time of his last admission I thought he had one of two things, either an acute endocarditis or an active rheumatoid pericarditis in addition to the previously existing rheumatoid arthritis.

DR. FREDERICK T. LORD: I saw this patient only at the time of his first admission. The two attacks of gonorrhea occurred some time after the onset of the arthritis and there seemed no reason to assume that he had had an earlier attack. Absence of a history of gonorrhea preceding the arthritis and our failure to prove the presence of gonorrheal infection led us away from the diagnosis of gonorrheal arthritis and we made a diagnosis of infectious arthritis.

CLINICAL DIAGNOSES

Rheumatic heart disease.
Aortic stenosis with regurgitation.
Mitral stenosis.
Pericarditis with effusion.
Congestive failure.
Pulmonary embolus.

DR. HOWARD B. SPRAGUE'S DIAGNOSES

Subacute bacterial endocarditis involving the aortic and probably the mitral valves.
Chronic infectious arthritis.

ANATOMIC DIAGNOSES

Subacute aortitis and aortic endocarditis of unknown etiology.
Hypertrophy and dilatation of the heart.
Thrombosis of the right auricular appendage.
Pulmonary embolism.
Chronic passive congestion.
Hydrothorax, bilateral.
Chronic infectious arthritis.

PATHOLOGIC DISCUSSION

DR. TRACY B. MALLORY: This man's heart, except for its slightly smaller size, looked almost identical with the preceding one. It weighed 580 grams. There was the same type of involvement of the aortic valve and then the same queer fibrous growth over the intima of the first portion of the ascending aorta. In this case, however, the lesion extended only a centimeter up the aorta but balanced this by extending about the same distance down over the ventricular endocardium below the aortic valve. Microscopically the picture is very similar to that in the preceding case though it appears slightly more acute. There is again a marked fibrous thickening of the intima with swollen, active looking fibroblasts but little leukocytic infiltration. The media shows focal absorption of muscle cells and elastic fibers and marked vascularization. There is more leukocytic infiltration in these slides with some polymorphonuclears, many monocytes and many lymphocytes. The vessels of the adventitia show perivascular cuffing with lymphocytes and also show definite endarteritis. The findings are consistent with the acute stage of syphilis. With this in mind Levaditi stains were done but no spirochetes could be demonstrated. The myocardium, as in the preceding case, showed focal areas of degeneration without leukocytic reaction but nothing suggesting either gummata or Aschoff bodies. The final episode in this case was pulmonary embolism—a single large embolus which apparently arose from a thrombus in the right auricle. Several joints were turned over to Drs. Bennett and Bauer for examination and Dr. Bauer will report on them.

DR. BAUER: I should like to say that the few joints we were able to examine showed changes which we ordinarily call the characteristic changes of an early rheumatoid arthritis. I believe that in this particular case one is almost forced to make two diagnoses unless they are willing to agree at this time that these two diseases are due to the same etiologic agent, as some of our New York colleagues would lead us to believe. How would you interpret this case of Dr. Sprague's?

DR. MALLORY: It is evident that the two cases we have discussed this morning are so closely similar that it is only reasonable to assume that they represent the same disease entity. What that is, however, is still a matter of doubt. In each case the anatomic lesion is typical of the acute stage of luetic involvement of the heart and aorta, a lesion that for two generations has been considered pathognomonic. Yet a considerable array of significant arguments can be marshaled against such a diagnosis. In the first place there are the negative Hinton tests. These are of course not conclusive but seven years' experience with the Hinton test in this hospital has convinced me of its high degree of sensitivity. The frequency with which it picks up congenital cases, vascular and bone cases, and neurosyphilis in which the Wassermann is negative makes it seem unlikely that two cases in the acute stage would have been missed. Barring these two cases the Hinton has failed to pick up only one luetic aortitis in the last twenty we have demonstrated at postmortem, whereas the Wassermann has missed three. The negative Levaditi in case 22141 is again of some significance though the unreliability of all spirochete stains is notorious. The absence of any history of syphilis is worth consideration. As Dr. Sprague pointed out twenty-six is younger than any proved case of aortic syphilis in our experience. The clinical evidence, it seems to me, is strongly against the diagnosis of syphilis.

What about the validity of our anatomic and histologic criteria? The last ten years have been prolific of discoveries of new diseases of the blood vessels and many lesions that would formerly have been ascribed to syphilis are now recognized as pathologic entities. Rheumatic fever is now known to cause extensive and severe aortitis, which though usually limited to the outer half of the media may cause significant endarteritis as in cases reported by Pappenheimer and Van Glahn and by Perla. Such extensive destruction of the media as these two cases we are discussing today showed has not, however, been reported, and Dr. Pappenheimer, who was kind enough to look at these sections for me, was not inclined to believe they were rheumatic.

That other types of aortitis exist, however, is certain. Klinge has described extensive aortitis in malignant hypertension when syphilis could apparently be excluded. I have personally seen an acute diffuse aortitis as the only anatomic cause of death. It is not impossible that some of these as yet unclassified processes may produce lesions indistinguishable from those of syphilis.

I imagine the majority of pathologists would classify these two cases as luetic. I can certainly offer no positive evidence to the contrary, yet I find myself distinctly skeptical of that diagnosis. We have insufficient positive evidence to claim they are rheumatic but I do not believe that possibility can be excluded, and particularly in Dr. Sprague's case the evidence is very suggestive. There remains the possibility of aortic endocarditis of unknown etiology, perhaps the precursor of certain of the mysterious calcific aortic stenoses ordinarily met only in their healed stages in elderly people. I must leave you to make your own choice.

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DIABETES AND TUBERCULOSIS

THE Statistical Bulletin of the Metropolitan Life Insurance Company for February comments upon the comparative mortality from Diabetes and Tuberculosis. It has been well known that the mortality rates for the former disease are rising, while those for the latter are falling, but many will be surprised to learn that these converging trends are expected to cross each other in the not distant future. For white females the diabetic death rate actually exceeded that for tuberculosis in fourteen states during the two-year period of 1933-1934. The male diabetic death rate will equal or exceed the tuberculosis rate at a more distant future, because it is generally so much lower than that of the female diabetics. Among the colored population, and in some of the Southern and certain "resort" States, the approach to the tuberculosis rate, on account of its relative height, is much less apparent. The general trend throughout the country, however, is unmistakable.

It is sometimes said that one half of the world does not know how the other half lives—but it is easy to know in a general way, how the other half dies. What may be more difficult is to ascertain why the other half dies as it does. The declining tuberculosis death rates have been quoted to illustrate the beneficence of everything from mountain air to salt water, and in between they have sold a lot of cough drops. The increase in diabetic deaths, on the other hand, is not so naïvely explained; indeed, the Census Bureau presents us with the paradox that the more successfully we treat the disease the greater will the death rate be. To die of diabetes one used to have to die in coma. Today coma deaths are rare; diabetics are kept alive indefinitely. They can live to die of a hundred other legitimate causes and still be classified as diabetic deaths by the Census Bureau. Because the diabetic trait is a maturing one, the fact that human longevity is increasing adds many new cases of diabetes to the population each year. These new cases will all eventually be recorded as diabetic deaths—and the longer we keep them alive the greater will be the "mortality" for which we have to answer.

As an elderly physician of the latter part of the last century used to say: "Although one should never give up a patient until three days after he is dead, no doctor can be expected to save a man from his last illness."

A LEGISLATIVE MISTAKE

AN amendment to Section One Hundred, Chapter One Hundred and Twenty-Three of the General Laws of the Tercentenary Edition (House 40) was introduced to the Massachusetts Legislature by Dr. Winfred Overholser, the Commissioner of Mental Diseases.

This amendment provided in substance that when a person under complaint or indictment for a crime was found by the court to be insane or in such mental condition that his commitment to an institution for the insane is necessary for his proper care or observation pending the determination of his mental condition, the court may commit him to a "State Hospital or to the Bridgewater State Hospital". The court may then employ experts to examine the defendant and pay all expenses incident to the study. The amendment further provided that examiners thus employed should be physicians registered in this Commonwealth and qualified by training and experience to carry out this procedure.

It is the duty of the Department of Mental Diseases to advise the Commonwealth from time to time of such matters as may be pertinent in dealing with insanity and the Commissioner properly met his obligation, evidently with the purpose of saving the State from error and applying justice to a defendant.

How did the Legislature behave when this

amendment was before it? The House approved and the bill went up to the Senate. There then ensued a disgraceful exhibition of opposition to a plan which would, if adopted, make court procedure more dignified and give assurance of intelligent treatment of a responsibility which will have to be met quite frequently.

During the Senate debate on this bill certain Senators, true to form on other occasions, ridiculed and insulted physicians recognized by the profession as eminent exponents of the application of scientific medicine to human needs. The bill was rejected.

Progress in several attempts to provide this Commonwealth with the best possible medical service has been prevented for many years by such people.

This deplorable state of affairs does not seem to be regarded seriously by the citizens of Massachusetts and is likely to be repeated unless public opinion becomes articulate and sentiment provokes action in improving the quality of statesmanship.

Unfortunately doctors find legislative responsibilities unattractive and few are willing to make the sacrifice involved in entering political life. These recent exhibitions of bad behavior will tend to deter medical men from seeking election to this chamber, but we need them there. The opportunity for honorable service should appeal to those who can afford to give time to it. If this sentiment could be expressed by organized medicine, it might lead some of our doctors to engage in this field of public service. A deliberative body that permits crude and indecent billingsgate in its proceedings needs the infusion of a dignified membership. The Senate as now constituted seems impotent to correct its faults. How long must we endure these insults?

The Massachusetts Medical Society

THE SCIENTIFIC EXHIBIT

In recent years, medical meetings have made a feature of the Scientific Exhibits. Of ever-increasing merit year by year, these exhibits have become an important feature of the meetings.

According to precedent, the forthcoming meeting of the Massachusetts Medical Society in Springfield promises to include features of interest to its members in the Scientific Exhibit. Modern methods of diagnosis and treatment in both surgical and medical fields are to be emphasized. Two exhibits on cancer treatment promise to be of interest: two on pathology, one on recent advances in chest surgery, another on plastic surgery, one on pneumonia and still another on anemia will engage the interest of all. Recent advances in diagnosis and therapy will be emphasized throughout.

The Scientific Exhibit will, as last year, be in the main hall together with the Commercial Exhibit. All members attending the meeting will find many items of interest in both exhibits.

THIS WEEK'S ISSUE

Contains articles by the following named authors:

Stein, Calvert. D.N.B., M.D. Tufts College Medical School 1928. Senior Physician, Monson State Hospital, Palmer, Mass. (Visiting) Psychiatrist, Springfield Hospital Child Guidance Clinic. His subject is The Rôle of Mental Hygiene in General Practice. Page 665. Address: Monson State Hospital, Palmer, Mass.

Smith, George Gilbert. A.B., M.D. Harvard University Medical School 1908. F.A.C.S. Visiting Urologist, Massachusetts General Hospital. Urologist, Palmer Memorial and Huntington Memorial Hospitals. His subject is Urological Complications in General Surgery. Page 672. Address: 6 Commonwealth Avenue, Boston, Mass.

Coyle, John A. B.S., M.D. McGill University Faculty of Medicine 1928. Otolaryngologist, Hitchcock Clinic, Hanover, New Hampshire. Address: Hanover, New Hampshire. Associated with him is

Sycamore, Leslie K. B.S., M.D. Harvard University Medical School 1927. Roentgenologist, Mary Hitchcock Memorial Hospital. Address: Hanover, New Hampshire. Their subject is Foreign Bodies in the Air and Food Passages. Page 677.

Eustis, Richard S. A.B., M.D. Harvard University Medical School 1911. Instructor in Pediatrics, Harvard University Medical School. Physician to Children's Medical Service, Massachusetts General Hospital. Consulting Pediatrician, Boston Lying-in Hospital and House of the Good Samaritan. His subject is Care of the Newborn. Page 681. Address: 319 Longwood Avenue, Boston, Mass.

Battershall, Jesse W. M.D. Tufts College Medical School 1916. Medical Examiner, First Bristol District, Massachusetts. Member of Staff, Sturdy Memorial Hospital, Attleboro. His subject is A Study in Feigned Murder. Page 686. Address: 18 North Main Street, Attleboro, Mass.

Christian, Henry A. A.M., LL.D., Sc.D. (Hon.) M.D. Johns Hopkins University School of Medicine 1900. Hersey Professor, Theory and Practice of Physic, Harvard Medical School. Physician-in-Chief, Peter Bent Brigham Hos-

pital, Boston. His subject is The Golden Age of Medical Endowments. Page 688. Address: Peter Bent Brigham Hospital, Boston, Mass.

The Massachusetts Medical Society

THE REVISION OF THE JOURNAL MAILING LIST

ACCORDING to a vote of the Council, the names of all Massachusetts Medical Society members whose dues for the current year are unpaid March 1, shall be removed from the mailing list of The *New England Journal of Medicine.*

The Editor of the *Journal* was, therefore, obliged this year to suspend sending the *Journal* to 653 Fellows. This is a smaller number than last year.

Fellows who wish to avoid loss of numbers of the *Journal* should immediately forward payment to their District Treasurers.

SECTION OF OBSTETRICS AND GYNECOLOGY*

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CORPUS LUTEUM TREATMENT OF THREATENED ABORTION

The diagnosis "threatened abortion" is properly made when uterine bleeding or painful, rhythmic uterine contractions occur before the twenty-eighth week of gestation. It is true that many pregnancies otherwise normal, which progress to term without treatment, are associated with a slight bloody discharge for one or two days, usually during the first few months, and some such have a few hours of painful uterine contractions. However mild such a threat may be, the diagnosis remains the same, for the sign and symptoms mentioned are due to forces which if unchecked by nature or treatment will finally terminate the pregnancy. We attribute contractions either to an increase in the contractile stimulus, emanating probably from the pituitary, or to an increase in sensitivity of the fundus by reason of at least a relative diminution of the corpus luteum hormone which normally renders the myometrium insensitive to such stimulus. The cause of the increased pituitary stimulus or of the decrease in corpus luteum inhibition is not known. The bleeding comes either from a dissolution of part of the decidua from an unknown cause which is intrinsically capable of destroying all the decidua, or it comes from a separation of a part of the chorion by an unknown cause which likewise is intrinsically capable of breaking the villous contact over the whole decidua basalis. In these cases in which abortion is but mildly threatened, and recovery spontaneous, the factors involved in either the destruction of the decidua or in the separation of the trophoblast on one hand, or in the change in pituitary or corpus luteum action on the other hand are promptly neutralized, are compensated for, or subside by reason of opposing qualities of either matrix or ovum or both. The clinician who would successfully combat the more vigorous threat of abortion must consider the factors for bleeding or for uterine sensitivity, which I have characterized as unknown, and consider, too, what I have called the "opposing qualities", which are equally mysterious.

Studies of the endometrium of both lower mammals and primates seem to show that the development of the mucosa into the decidua and its maintenance during at least the early part of pregnancy are due to the effect on the endometrium of properly related amounts of estrin and progestin from the corpus luteum. This gland is a biological puzzle. Only a fertilized ovum can normally sustain it beyond a limited period,—about fourteen days in human beings; and the corpus luteum in turn is essential to the early development of the ovum. If, in primates, the corpus luteum is removed in the first third of pregnancy, the decidua disintegrates and bleeding occurs, followed by miscarriage. Except in placenta praevia, which we mention below, whenever red flow occurs early in human pregnancy we can, with what justification recent biological studies give us, postulate a disturbance in corpus luteum physiology and either an absolute deficiency of progestin or a deficiency relative to the amount of estrin present. The same may be said of an increase in myometrial activity.

There are two theoretical ways of compensating for this partial failure of the corpus luteum. One is to substitute for it by supplying the woman with progestin obtained from the corpora lutea of other mammals. This is already commercially available and a synthetic progestin may soon be on the market. The second theoretical way to compensate for progestin deficiency is to increase its production, presumably by encouraging the anterior pituitary to increase its production of the so-called luteinizing hormone. More of this later.

If one is to substitute, a very important detail in the treatment, the proper dosage must be determined. Progestin is marketed in ampoules containing 1 cc. of solution of progestin with stated potency of 1/25 rabbit unit, of 1/5 rab-

*A series of short selected articles by members of the Section is being published weekly.
Comments and questions by subscribers are solicited and will be discussed by members of the Section.

bit unit, of 1 rabbit unit, and of 5 rabbit units. There is no clinical evidence known to the writer that doses of less than 3 rabbit units have any effect on the *nonpregnant* woman. He has enough clinical evidence to make him think that anything less than repeated doses of 3 rabbit units will *not* affect the nonpregnant patient, whether she gives evidence in her endometrium that there is no active corpus luteum present, or that there is a normal one present.

In the pregnant woman who is threatening to miscarry, either the ovum is normal and alive and therefore worth saving or it is abnormal and fortunately perhaps already dead. If the ovum is good enough to save, biology teaches us there must be present in the patient a corpus luteum which is secreting at least a moderate amount of progestin,—in all probability, at least as much as the nonpregnant patient produces during the latter half of the normal menstrual cycle. If repeated doses of less than 3 rabbit units of progestin are not effective on the bleeding mechanism in the nonpregnant patient, or on the pain from essential dysmenorrhea, it seems a fair conclusion that such an amount can have no appreciable effect in the pregnant patient.

The published reports of cases treated with small amounts are quite unconvincing. The "post hoc ergo propter hoc" conclusions drawn from these cases are not acceptable until we learn that we are wrong in believing that in more than 65 per cent of completed abortions, the conceptus is already dead or abnormal when the first threat of miscarriage is made—a belief which is based on careful examination of miscarriage products by competent embryologists. The other 35 per cent of the completed miscarriages are the only ones which concern us, and which obviously need some other treatment than the methods available up to now. Included among these are undoubtedly some cases of early placenta praevia in which purely mechanical separation of the trophoblast from decidua causes the first bleeding which progresses until enough separation has occurred to render the conceptus a foreign body. This, then, of itself invokes uterine contractions by a mechanism unknown. The treatment for these must be preventive, of which we know nothing, or complete rest, of the necessity for which we usually become aware only too late to accomplish anything. The treatment of the other patients, who merely threaten to abort but do not execute the threat, is obviously adequate. It may be that the patients who thus fail to fulfill their threat to abort, and who have normal concepti, will be more easily deterred by progestin; but to this end they will, in all probability, need larger doses than heretofore, or than any but the richest can afford at the present prices.

If adequate substitutional treatment for a theoretical progestin deficiency is thus not always available, the only other compensatory method is stimulation of the patient's corpus luteum to work more effectively. Our only approach to this end is through the anterior pituitary; and we have only theoretical ways of encouraging the anterior pituitary to supply an adequate luteinizing stimulus. Empirically, rest, with its beneficent effect on the central nervous system, and through this on the sympathetic nervous system; and through both, on the adrenals and the thyroid; and, perhaps directly or through this latter effect on related endocrine structures, on the pituitary gland,—rest, has proved helpful in defending against the threat of abortion. To such rest, experience, and some sound biological conclusions, teach us to add an extra supply of what vitamins we are aware of, of the minerals contained in milk, of iron in the presence of anemia, and of iodin or thyroid extract in the presence of even a slight measurable disturbance of thermodynamics. These with a balance of fats, carbohydrates, and proteins are the best agents we have for pituitary support. As the ovum develops, its dependence on the corpus luteum grows less but its requirements of metabolites derived from food grow greater. The same treatment, persisted in, which applies what little we know of human nutrition, then benefits the conceptus directly. There is slight but increasing evidence that as the chorion develops, it takes to itself the production of progestin or a similar hormone which doubtless maintains integrity of the maternal portion of the placenta.

AIDS TO THE COMMITTEE OF ARRANGEMENTS

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Dr. Edward F. Gleason, Hyannis.
Dr. Frank E. Draper, Hyannis.
Dr. Harold F. Rowley, Harwichport.

Franklin District

Dr. F. A. Millett, Greenfield.
Dr. Chauncy V. Perry, Greenfield.

THIRD ANNUAL POSTGRADUATE MEDICAL EXTENSION COURSE

The following sessions have been arranged by the Committee for the week beginning April 5:

Berkshire

Thursday, April 9, at 4:30 P.M., at the House of Mercy Hospital, Pittsfield. Subject: Diseases of the Liver — Hepatitis and Painless Jaundice. Problems in Diagnosis and Treatment. Instructor: E. S. Emery. Melvin H. Walker, Jr., Chairman.

Bristol North

Wednesday, April 8, at 7:30 P.M., at the Morton Hospital, Taunton. Subject: Kidney and Bladder Diseases A and B (Surgical)—Hematuria: Its Significance in Surgical Diseases of Kidney and Bladder. Prostatism and Related Diseases. Cystitis and Pyelitis. Instructor: Richard Chute. Arthur R. Crandell, Chairman.

Bristol South (New Bedford Section)

Friday, April 10, at 4:00 P.M., at the St. Luke's Hospital, New Bedford. Subject: Pediatrics (Medical)—The Neonatal State. Instructor: L. W. Hill. Harold E. Perry, Chairman.

Norfolk*

Friday, April 10, at 8:30 P.M., at the Norwood Hospital, Norwood. Subject: Dermatology—Ten Common Skin Diseases — Diagnosis and Treatment. (1) Impetigo Contagiosa, (2) Scabies, (3) Acne Vulgaris, (4) Psoriasis and Seborrhoeic Dermatitis, (5) Epidermophytosis, (6) Herpes Simplex and Zoster, (7) Eczema, (8) Erythema Multiforme, (9) Verruca Vulgaris and (10) Dermatitis Medicamentosa and Dermatitis Venenata. Instructor: E. L. Oliver. H. B. C. Riemer, Chairman.

Worcester (Milford Section)

Wednesday, April 8, at 8:30 P.M., at the Milford Hospital, Milford. Subject: Kidney and Bladder Diseases B (Surgical)—Prostatism and Related Diseases. Cystitis and Pyelitis. Instructor: S. B. Kelley. Joseph I. Ashkins, Sub-Chairman.

*The Course previously given at the Faulkner Hospital has been combined with the group at the Norwood Hospital.

MASSACHUSETTS LEGISLATIVE NOTES

HOUSE BILL 34

The Senate has passed House Hill 34 with three amendments which are as follows:

In House

Amend the bill by adding after section 2 the following new section:—"Section 3, For purposes of examination and registration, osteopathic schools rated as A schools by the American Osteopathic Association shall have the same standing before the board as A schools so rated by the American Medical Association."

In Senate

Add at the end of section one the following:—"An applicant aggrieved by the refusal of the board to approve a medical school under this section shall be entitled to have the reasonableness of such refusal reviewed by a justice of the superior court, whose decision shall be final."

In Senate

In section 1—striking out in line 15, the words "the board" and inserting in place thereof, the words "a board consisting of the Secretary of the Board of Registration in Medicine, the Commissioner of Education, and the Commissioner of Public Health."

These amendments leave the more important features of the bill operative. The bill now goes to the House for concurrent action and if passed by the House will be presented to the Governor. It has had a long and stormy passage.

MISCELLANY

AFFAIRS IN CONNECTICUT

A Commission to Study Laws Relating to Automobile Accidents

A temporary commission has been appointed in Connecticut to study financial responsibility laws as they relate to automobile accidents. This commission, consisting of Motor Vehicle Commissioner Michael A. Connor, Insurance Commissioner John C. Blackall and Superior Court Judge Frank P. McEvoy, has been meeting informally with various groups affected by and interested in these laws. On March 9, 1936, representative physicians from the eight different counties were given a hearing by this commission and on this occasion it was learned that Connecticut hospitals are losing money caring for persons injured in automobile accidents with no means of paying for their treatment. The commission was informed that in many of these cases where the responsible person carries no liability insurance the hospital has no means of collecting its costs. The physicians present also impressed upon the commission the fact that members of the profession caring for emergency cases frequently find themselves unable to collect for services rendered.

There is a very strong feeling among the medical profession in Connecticut that the present laws relating to financial responsibility in automobile accident cases are entirely inadequate. Advocates may be found of compulsory liability insurance for all automobilists as exists in Massachusetts. Others are in favor of the establishment of a state fund maintained by taxation to be used to meet hospital bills and physicians' fees in such cases.

Pneumonia Mortality

The death rate from pneumonia in Connecticut during the last six years has been consistently lower than at any time as far back as 1885. For 1935 the pneumonia death rate was 65.2 per 100,000 population. The lowest rate during the past fifty years was attained in 1934, that of 62.9. The 1935 rate was the second lowest with only 1,123 deaths. The highest point was reached in 1918 when influenza was epidemic in this country and in Europe.

The director of the Bureau of Preventable Diseases of the State Department of Health believes that the use of pneumonia serum has had some ef-

fect in reducing the death rate, though just how much he was unwilling to estimate.

New Britain has experienced an epidemic of scarlet fever so severe that it was considered wise to close the schools.

Problems in Connection with the Flood

Hartford and neighboring towns and cities along the Connecticut River, after experiencing the worst flood in their history, now face the possibility of an epidemic as the waters subside. The State Commissioner of Health has recommended that all persons working in flooded areas throughout the State be immunized against typhoid fever. The Hartford Board of Health has already started this preventive treatment.

The public water supplies throughout Connecticut during the flood have remained unimpaired, although at one time it was believed that the town of Cromwell had suffered pollution of its reservoir. This water supply was later proved by tests to be safe. A food shortage is not likely since highway communication and rail communication to the southwest have remained open.

In Hartford, to prevent the spreading of respiratory diseases and to give first-aid treatment, volunteer physicians have been assigned to various schools where the refugees are housed. These physicians work in two-hour shifts throughout the day and until midnight, the remainder of the twenty-four hour period being covered by physicians on call. The Hartford Dispensary has remained open day and night, including Sunday, and has been covered by its own volunteer staff of physicians also working in two-hour shifts. Private practice has been greatly disrupted by the absence of electricity, phone service and the difficulties of transportation. For several days, while without an adequate supply of electricity, the various hospitals of Hartford were forced to limit their surgical work to emergencies.

Connecticut News

G. Mansfield Craig, M.D., of Haddam has been appointed medical examiner of that town by Coroner L. A. Smith.

Louis M. Allyn, M.D., of Mystic has resigned as a member of the board of trustees of the Mystic Oral School for the Deaf. To fill this vacancy Governor Cross has appointed Hugh F. Lena, M.D., of New London.

The school is a State institution for the care and training of deaf children. Although Dr. Allyn has resigned from the board of trustees he will continue as physician at the school. Dr. Lena is appointed for the unexpired portion of Dr. Allyn's term ending July 1, 1936, and for the full term of three years from that date. Dr. Lena is a graduate of Dartmouth, 1912, and Johns Hopkins University School of Medicine, 1916. Since his discharge from the U. S. Navy in 1919 he has operated his own private hospital in New London.

Recent Death

CROWE — Willis Hanford Crowe, M.D., of 409 Whitney Avenue, New Haven, Connecticut, with an office at 59 College Street, died at his home, March 24, 1936.

Dr. Crowe was born in 1873 and graduated from the College of Physicians and Surgeons of New York in 1895. He had served on the surgical staff of St. Raphael's Hospital for many years.

His widow, Mrs. Grace McDonald Crowe; a son, Willis M. Crowe, of Worcester, and a daughter, Mrs. Schuyler Gillespie, survive him.

Obituary

TRACY — Dwight Wallace Tracy, M.D., fifty-two years old, one of Hartford's leading dermatologists, died at his home in West Hartford, Sunday, March 22, 1936. He had been ill with heart disease for several months and in December, 1935, was obliged to relinquish his practice.

Dr. Tracy was born in Hartford, May 28, 1883, son of the late D. W. Tracy, for many years a prominent pharmacist of that city. He received his elementary education in Hartford, was graduated from Yale University in 1904 and from Johns Hopkins University School of Medicine in 1908. After studying abroad he served an interneship at the Hartford Hospital. During the World War Dr. Tracy was contract surgeon for the Students' Army Training Corps at Trinity College, Hartford, being commissioned major. For eleven years he served as medical inspector for the Hartford Board of Health prior to the war. Before his retirement from practice Dr. Tracy had served for many years on the staffs of the Hartford, Hartford Municipal, Litchfield County, Canaan, Middlesex, and Charlotte Hungerford (Torrington) Hospitals. He was a thirty-second degree Mason and a Past Master of Hartford Lodge, No. 88, A. F. & A. M. A member of the Hartford Medical Society, the Hartford County Medical Association, and the Connecticut State Medical Society, he also belonged to several clubs including the University Club of Hartford, the Yale Graduate Club of New Haven, and the Yale Club of New York City. He was active in the work of Christ Church Cathedral of which he was a member.

Dr. Tracy is survived by a widow and three children. The funeral was held from his home on March 24, 1936, several of his friends in the profession serving as bearers.

THE ELECTION OF DR. SHIELDS WARREN

At a recent meeting of the American Society for Experimental Pathology, Dr. Shields Warren of Boston was elected Secretary-Treasurer.

According to a report in the *New York Times*, Dr. Warren made some valuable suggestions on the irradiation of cancers by x-rays and the gamma rays of radium. Experimenting on rats, Dr. Warren found that cancer cells fail to multiply at the normal rate within an hour and a half after a radium

treatment. The lowest point of reproduction is reached from two to ten hours after irradiation. The cancer cells begin to multiply again after that time, but at only a third of the old rate for some seventy-two hours.

APPOINTMENT OF NEW MEMBERS TO THE HARVARD FACULTY

James R. Lingley, of the Massachusetts General Hospital, Boston, Mass., B.A. Acadia University, N. S., '23, M.A. ibid. '24, M.D. Harvard '28, appointed Roentgenologist in charge of the X-Ray work of the Harvard Hygiene Department until September 1, 1936. He is now Assistant Roentgenologist at the Massachusetts General Hospital, and Roentgenologist at the McLean Hospital, Waverley, and at the Norfolk Prison Colony, Mass.

March 1 to September 1, 1936

Professor Julian H. Capps, of Berea College, Ky., A.B. Illinois '12, A.M. Princeton '14, appointed Research Fellow in Chemistry. Professor Capps is on leave from Berea College and while at Harvard will do research in collaboration with Professor Gregory P. Baxter of the Harvard Chemistry Department.

James A. Kennedy, of the Peter Bent Brigham Hospital, Boston, Mass., A.B. Vanderbilt University '31, M.D. ibid. '34, appointed Research Fellow in Medicine.

For One Year from April 1, 1936

Robert B. Hightower, of the Children's Hospital, Boston, Mass., S.B. Mississippi State College '27, M.D. University of Virginia '32, appointed Instructor in Child Hygiene and Pediatrics in the Harvard Medical School and School of Public Health.

APPOINTMENTS TO THE BOARD OF SCIENTIFIC DIRECTORS OF THE ROCKEFELLER INSTITUTE

The Board of Trustees of The Rockefeller Institute for Medical Research announces the election of Dr. Walter Bradford Cannon and Dr. George Hoyt Whipple as members of the Board of Scientific Directors.

CHRONIC DISEASE*

"Chronic disease is becoming a major public health problem. This is largely due to the change in the composition of the population. In Massachusetts in 1850, 31 per cent of the population died after the age of forty; in 1934, 78 per cent. The factors behind the ageing of the Massachusetts population are improved public health activities which have lessened the number of deaths in early infancy and young adulthood; the declining birth rate which tends to increase the average age of the population; and the decreased immigration which lowers our population in the middle age groups.

"The ratio of the number of individuals in the productive age group (20-60) to the nonproductive age group (over 60) has declined since 1870 from 7 to 1 to 5.4 to 1. On the other hand, while the total expectation of life is considerably greater than at any other time in our history, there has been practically no change in the expectation of life of individuals who arrive at the age of fifty. The average age at time of death of those individuals is slightly less than it was two generations ago.

"With more people coming into the late adult age groups and with no improvement in the diseases most common in these age groups, a problem both from an economic and a humanitarian standpoint arises. The ever decreasing number of individuals in the wage-earning groups has an ever-increasing number of completely dependent individuals in the nonproductive age groups.

"The costs of chronic disease are much higher than those of acute illnesses as the duration is long and the care needed in many cases is considerable. A ten-year period of complete disability with chronic rheumatism entails great suffering on the part of the individual as well as an economic burden on the part of the family. The problem, however, would not be nearly so acute if all chronic disease were confined to the over-sixty group. Instead, a large part of it is occurring in the productive ages.

"During 1929-31 the State Department of Public Health made a survey of chronic disease in fifty-one cities and towns in Massachusetts. From the records obtained we estimated that 21 per cent of the population between forty and fifty were suffering from chronic disease. Many of these individuals were still able to work as the disease had not progressed far enough to warrant invalidism. None of them, however, could do as good work as if they had been free from chronic disease.

"Chronic disease will probably never be completely eradicated but if its onset could be delayed until late adult life an immediate improvement in conditions would be apparent not only in the individual and his family, but also in the general community because he would be an asset rather than a liability. The solution probably lies in—first, a better knowledge of the various chronic disease conditions; secondly, better hygiene on the part of the people throughout childhood and middle life; and thirdly, frequent consultations with family physicians, at least, when slight deviations from normal occur and, and as an optimum, periodic health examinations while still well. There is considerable evidence to show that many of the chronic disease processes are influenced by faulty hygiene. Improvement in this direction may prolong the onset of many of these diseases. A large part of the population does not seek medical advice even when it is aware of abnormalities of function. Many diseases could be arrested in their early stages if the public were better educated in making use of available medical facilities and if the physicians were better educated in the recognition and study of minor deviations from the normal.

*Part of a free public lecture by Dr. Herbert L. Lombard, Director, Division of Adult Hygiene, Massachusetts Department of Public Health, given Sunday afternoon, March 22, at the Harvard Medical School.

"Inasmuch as many of the procedures incidental to the establishment of a diagnosis, such as x-ray, metabolism tests, blood chemistry, etc., require considerable outlay on the part of the patient and expensive equipment on the part of the physician, it naturally follows that every physician has no such resources available for every individual. Some method must be inaugurated whereby every physician will have at his disposal adequate laboratory facilities for patients of low and moderate means. Many suggestions have been made as to how this can best to accomplished. It is my feeling that government money should be used to help both the physician and his low-income patient to obtain these services. It should be possible for the physician to have access to free x-ray, metabolism tests, etc., when the need for them arises. If this were possible, much of the criticism of the costs of medical care would be removed.

"Such a program was inaugurated for cancer in this State ten years ago. Any person unable to pay receives as much x-ray diagnostic work as is needed and any other processes necessary for the establishment of a diagnosis and for subsequent treatment. This plan has worked admirably in cancer. It might well be extended to other diseases."

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT WITH 1935 AND SEVEN YEAR AVERAGE

MONTH ENDING FEBRUARY 29, 1936

	1936					1935			
Diseases	Week ending Feb. 8	Week ending Feb. 15	Week ending Feb. 22	Week ending Feb. 29	Average cases reported for week corresponding to Feb. 29 for past seven years	Week ending Feb. 9	Week ending Feb. 16	Week ending Feb. 23	Week ending Mar. 2
Amebiasis	—	—	1	—	—	—	—	1	—
Chickenpox	163	114	108	96	102	175	149	145	153
Conjunctivitis Infectious	5	2	53	—	—	1	—	—	—
Diphtheria	1	—	—	4	13	6	1	3	5
Dysentery Bacillary	—	1	—	—	—	2	1	—	—
Encephalitis Epidemic	—	1	—	—	—	—	—	—	—
German Measles	162	169	191	180	27	19	20	35	67
Influenza	4	12	4	17	753	9	21	12	32
Measles	124	122	78	91	233	617	620	689	785
Meningococcus Meningitis	1	—	4	2	2	1	—	1	1
Mumps	64	83	73	63	95	35	68	59	31
Paratyphoid Fever	1	1	2	—	—	—	1	—	—
Pneumonia (Broncho)	51	43	54	55	50	37	51	36	44
Pneumonia (Lobar)	69	62	83	74	56	33	52	37	38
Poliomyelitis	—	—	—	1	—	—	—	—	—
Scarlet Fever	69	67	78	89	82	49	65	53	67
Smallpox	—	—	—	—	1	—	—	—	—
Streptococcus Sore Throat	4	—	2	3	3	3	3	3	4
Tetanus	—	2	—	1	—	—	—	—	—
Trichinosis	—	1	—	—	—	—	—	4	2
Tuberculosis (Pul.)	23	30	24	42	27	34	21	14	30
Tuberculosis (O. F.)	—	4	2	3	3	1	1	2	2
Typhoid Fever	2	—	—	1	—	—	—	2	2
Typhus Fever	1	—	—	—	—	—	—	—	—
Undulant Fever	3	1	2	—	—	1	1	1	—
Whooping Cough	85	56	57	77	71	73	68	61	62
Gonorrhea	31	34	12	35	37	26	26	16	29
Syphilis	46	61	33	48	50	47	41	45	66

Remarks: No cases of Asiatic cholera, glanders, plague or yellow fever during the past seven years.

THE PROBABLE APPOINTMENT OF DR. PARRAN

President Roosevelt has nominated Dr. Thomas Parran, Jr., to succeed Dr. Hugh Cumming as Surgeon General of the United States. There is every reason to expect that this will be confirmed, both because Dr. Parran was appointed by the President as Health Commissioner of New York State and because his administration of the State Health Department was most satisfactory.

Although the administration of the Public Health Service by Dr. Cumming has been generally endorsed, there is abundant reason to believe that the quality of public service in this department will not diminish under Dr. Parran's direction.

This appointment is just recognition of an honorable and efficient public servant.

MORTALITY RATES FOR 1936

So far as the "Weekly Health Index" of the Bureau of the Census applies to the United States, it seems to show that the mortality rates for February and March 1936 are well above those of 1935. The figures are based on a population of thirty-seven million inhabitants of eighty-five cities and are for February more than a full point per 100,000 above the rates for last year.

Climatic conditions have been trying this year and may have had an effect on the mortality rates.

CORRESPONDENCE

PUERPERAL DEATHS

Harvard University
School of Public Health

March 18, 1936.

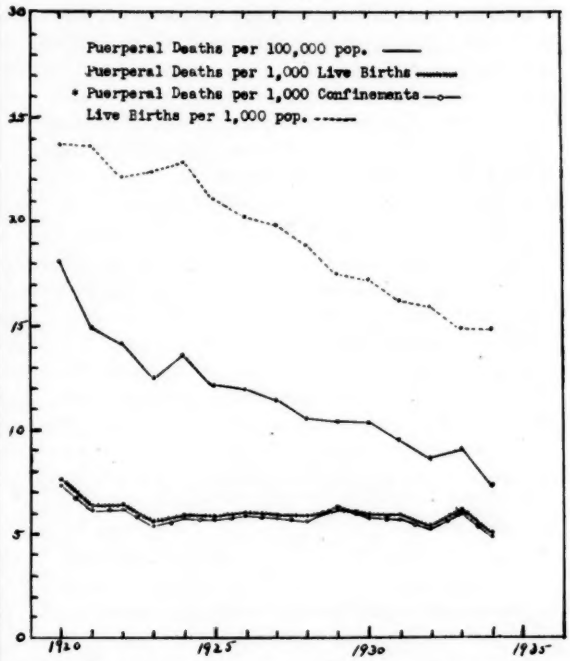
Editor, *New England Journal of Medicine,*

The need for care in the presentation and interpretation of statistical data has become more generally recognized by physicians in recent years, but medical literature continues to include examples of the misuse of such data. It would seem desirable to call attention from time to time to one or another of the statistical errors which the physician is likely to encounter, in order to keep writers constantly on their guard. With this in mind I am submitting a chart and citing a recent example from your *Journal* which shows rather vividly the kind of error which may result from the incorrect choice of a basis for the estimation of a death rate.

In your issue of October 10, 1935, an article dealing with "Changes in Maternal Mortality and Their Significance" appeared to show that there has been a sharp decline in maternal mortality in Massachusetts during recent years and attributed this primarily to the efforts of the medical profession. Unfortunately the author failed to take into account the fact that only a small portion of the total population are potential candidates for death from puerperal causes and that the percentage of these has been falling rapidly in recent years. The accompanying chart shows in the curve at the top the rapidity with which the birth rate has been falling in Massachusetts since 1920 and the middle curve shows that the number of puerperal deaths per 100,000 population has been falling with almost equal rapidity. This is the curve upon which the principal conclusions in the article referred to were based.

Assuming that a woman cannot die from causes associated with pregnancy without first becoming pregnant, other things being equal, the number of puerperal deaths will vary directly with the number

MASSACHUSETTS.



*Inclusive of stillbirths and making proper deductions for plural births.

of pregnant women in the community. We have no record of the actual number of pregnancies occurring in the State during each year, but we do know the number of stillbirths and live births. If we assume that practically all deaths reported as puerperal are associated with these we may add together the reported stillbirths and live births, correct for multiple births, and use the resulting figure as the basis for a maternal death rate. The curve shown at the bottom of the accompanying chart was obtained in this way. Owing to the fact, however, that only live births are reported with absolute accuracy, it has become customary to use as a maternal mortality rate one that is related to live births alone. This curve is also shown and is almost identical with the one corrected for stillbirths and multiple births. It may therefore be assumed that the customary maternal mortality rate based upon live births portrays quite accurately any changes in the number of maternal deaths which occur per thousand pregnancies. This rate plots out, as shown in the chart, as an almost straight and undescending line and only in the year 1934 can it be inferred that improvement is suggested by the figures. The ar-

ticle therefore entirely loses its point for it explains an assumed improvement which is in reality non-existent.

It has seemed worthwhile to present this chart as an example of one of the errors to be avoided and I trust that you will find space for its publication.

HAROLD C. STUART, M.D.

PERMANENT WAVES AND HAIR DYE

Editor, *New England Journal of Medicine*,

For the last two years a patient of mine has been very much annoyed and chagrined by the results of her "permanent waves". This white-haired lady allows herself only one "permanent wave" each year and on the last two occasions she has returned to her family more or less disguised by the slate color of her hair. Her chief lament has been that she feared her friends would consider that she had been foolish enough to allow her hair to be dyed.

Such an experience has been unique in my practice and as I have felt that perhaps idiosyncrasy played the leading rôle in these mishaps I have said nothing in print about them. My theory has been, however, that the patient has been using for some time a hair lotion containing mercury and that owing to the great heat employed in the "permanent" waving of the hair or to the unknown patented solution which all hair-dressers use prior to the application of the heat, the normal sulphur content of the hair has become susceptible to the mercury of the hair lotion and the resultant color has been due to the deposit of the black sulphide of mercury. Unfortunately, this discoloration has proved to be a fast dye yielding to no decolorizer which I have dared to use on this delicate white hair. The lapse of time each year has restored the normal color.

One reason for this letter to the *Journal* is due to the fact that my experience has proved not to be unique, for Drs. A. M. H. Gray and R. Klaber have published on pages 97-99 of the *British Journal of Dermatology and Syphilis* for February 1936 a similar observation in which the hair became a brown black. Dr. Gray states that the unknown solution used by English hairdressers to prepare the hair for the "permanent" waving contains ammonia. Dr. Gray further writes that he has found in the literature only one analogue, that described by K. Philipsen (Ugesk. f. Laeger **95**: 746 [June 29] 1933—Zentralbl. f. Haut **46**: 199, 1933).

My second reason for this letter, following the experience now of three observers, is to warn physicians who are about to prescribe to white-haired ladies mercury-containing hair lotions to tell these patients that such a lotion is incompatible with "permanent waving" and that if they desire such treatment from a hairdresser they must suspend the use of such a lotion, probably, for at least two months.

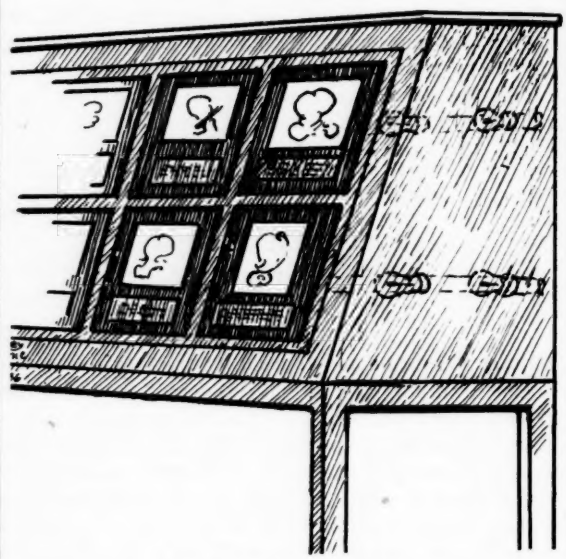
CHARLES J. WHITE, M.D.
259 Marlborough Street,
Boston, Mass.

A NEW METHOD OF MEDICAL ILLUSTRATION

Editor, *New England Journal of Medicine*,

During the past year a new method of illustration has been found successful for demonstrating the steps of surgical procedures or for summarizing the steps in the treatment of special cases. The method of applying color to the commercial product of translite paper for medical use was developed by me in this Clinic. A drawing or photograph is so colored and illuminated as to give a more realistic and effective result than has been possible with the usual black and white illustration.

The basis of the illustration is a half tone drawing. A photograph of the drawing is made directly on to translite paper (Eastman). The translite paper, being sensitive on both sides, takes too dark a print on the front and too light a print on the back. When a light is placed behind the print the correct value is obtained. Color is applied to the back of the print. Transparent oil colors are used. When the print is shown in a dimly lighted room the color is visible from the front.



Translite Exhibit Cabinet.

In making the translite print the photographer should take care to make the print light enough so that when the color is applied to the back of the print the shading will be light enough and the color effect will not be "muddy".

The oil paint is applied to the print in the manner of coloring photographs. The best result is obtained by coloring the print over a ground glass in front of a daylight electric light bulb. For ease of handling the print while coloring it is convenient to mount it on a piece of cardboard which has a hole cut out the exact size of the drawing. Adhesive tape may be used to hold the margins of the print to the cardboard frame. The thickness of the cardboard enables the print to be handled and laid color side down without allowing anything to touch the color side.

When a series of prints are exhibited they may be shown in an arrangement similar to that used for x-ray films. Pieces of clear glass and ground glass with the print between them are held in place by a series of frames. The enclosed space behind the illustrations contains the lights. Frosted daylight electric bulbs are satisfactory. If the drawings or photographs are matted with dark paper the artistic effect is better. If the mat is made large enough a space may be cut away for a title which is also made on the translite paper. The mat helps in keeping all light from within the cabinet from showing through accidental cracks between the print and the frame.

Color used in this manner makes drawings or photographs more graphic. When drawings, photographs and x-rays are thus assembled, the arrangement is very satisfactory for study by a group of people.

HELEN LEWIS LOUD,
Artist to the Lahey Clinic.
605 Commonwealth Avenue,
Boston, Mass.

PERIARTERITIS NODOSA

March 20, 1936.

Editor, *New England Journal of Medicine,*

In the March 19 issue of The *New England Journal of Medicine* there appeared an extremely interesting report from the Case Records of the Massachusetts General Hospital. It was a fatal case of (probable) periarteritis nodosa in which skin changes were a prominent feature. The latter included vesicles, pustules, scaly erythematous patches, swollen and blotchy lesions and nodules. In the discussion, the belief was expressed by several of the physicians present and by the pathologist in particular, that the skin lesions had no relation to the underlying disorder.

It is therefore pertinent to present the following: Crosti, A. (Gior. ital. di dermat. e sif. **76**: 15 Feb., 1935) described a case of periarteritis nodosa in a five-year-old boy, in whom the skin changes were very striking. They were composed mainly of areas of polymorphous erythema and nodular infiltrates, the latter varying in size from a millet seed to a pea. Crosti also called attention to the fact that it is necessary to recognize the cutaneous and subcutaneous symptomatology (which may be comprised of infiltrative erythema, hemorrhages, nodules, necrosis or elephantiasis) not infrequently present in periarteritis nodosa. The reason is obvious, especially in cases not fatal and in those in which a biopsy is impossible.

Another recent case was that reported by F. Goldschlag and A. von Chwalibogowski (Arch. f. Dermat. u. Syph. **171**: 622 [Aug. 14] 1935). The diagnosis of periarteritis nodosa was confirmed histologically. The most striking changes of the entire clinical picture were those in the skin. The latter presented livid quarter-dollar-sized areas, papules, urticarial efflorescences, subcutaneous nodules and livedo racemosa.

In a very recent article, L. Motley (J. A. M. A. **106**: 898 [Mar. 14] 1936) called attention to the fact that skin lesions not infrequently appear in periarteritis nodosa and take the form of subcutaneous hemorrhages, urticaria and in particular purpura resembling Schönlein's disease. One of his cases presented erythematous purpuric-like lesions and subcutaneous nodules.

If one is to believe the assumption of some of the leading dermatologists that periarteritis nodosa is a symptom complex similar to erythema nodosum-like and erythema multiforme-like conditions due to various etiologic agents such as drugs, infections, etc., then the skin lesions present should naturally be a prominent and striking feature of the entire picture.

J. L. GRUND, M.D.
483 Beacon Street,
Boston, Mass.

RECENT DEATH

BARNES—IDA F. BARNES, M.D., a graduate of the Boston University School of Medicine in 1893, died at her home in Beverly, Massachusetts, March 26, 1936. Dr. Barnes was born in New York, the daughter of Hobart and Alice Barnes. After graduating in medicine, she practiced for a time in Boston.

NOTICES

MEDICAL CLINIC AND STAFF ROUNDS AT THE PETER BENT BRIGHAM HOSPITAL

At 3:30 P.M. on Thursday, April 9, in the Amphitheatre of the Peter Bent Brigham Hospital, Dr. Henry A. Christian, Physician-in-Chief, Hersey Professor of the Theory and Practice of Physic in the Harvard Medical School, will give a medical clinic. To it are cordially invited practitioners and medical students.

On Saturdays in the wards of the Peter Bent Brigham Hospital, from 10 to 12, staff rounds will be conducted by Dr. Christian.

EXAMINATION OF CANDIDATES FOR APPOINTMENT TO THE PUBLIC HEALTH SERVICE

A board of commissioned officers will meet at the U. S. Marine Hospital, Boston, Mass., at 10 A.M., April 13, 1936, for the purpose of examining candidates to determine their eligibility for appointment to the grade of Assistant Surgeon in the Regular Corps of the Public Health Service.

BUREAU OF MEDICAL RELATIONS WITH FOREIGN COUNTRIES AT THE FACULTY OF MEDICINE—PARIS, FRANCE

Announcement has been made of the existence of a Bureau of Medical Relations with Foreign Countries (Bureau des Relations Medicales avec l'Etranger) by the Faculty of Medicine in Paris. Here students and physicians are able to obtain any in-

formation they desire concerning postgraduate courses of hospital services.

Foreign students or physicians should communicate with the Bureau of Medical Relations at the Faculty of Medicine in Paris and announce their arrival; a cordial welcome will be extended to them.

AMERICAN MEDICAL GOLFERS PLAY IN KANSAS CITY, MONDAY, MAY 11

The American Medical Golfing Association will hold its twenty-second annual tournament at the Mission Hills Country Club and the Kansas City Country Club in Kansas City on Monday, May 11, 1936.

To accommodate comfortably the large entry which is anticipated, the Kansas City Committee has arranged play over two very fine courses which touch corners: the Mission Hills Country Club and the Kansas City Country Club. Their club houses are only one mile apart and ample transportation between the two has been arranged. Dinner for all players will be served in the Mission Hills Club House.

Seventy Trophies and Prizes will be awarded.

There are 1,150 A. M. G. A. members. Every state of the Union is represented.

APPLICATION FOR MEMBERSHIP

All male Fellows of the American Medical Association are eligible and cordially invited to become members of the A. M. G. A. The Executive Secretary, Bill Burns, 2,020 Olds Tower, Lansing, Michigan, will furnish application blanks.

UNITED STATES CIVIL SERVICE EXAMINATIONS

Clinical Director (Female), $5,600 a Year
Director of Laboratories, $5,600 a Year
Associate Psychotherapist (Female), $3,200 a Year

Saint Elizabeths Hospital, Washington, D. C.

Applications must be on file with the United States Civil Service Commission at Washington, D. C., not later than April 20, 1936.

Duties.—Clinical Director (Female).—As general administrator of a major division of a psychiatric hospital, to direct the medical and nursing personnel in connection with the psychiatric examination, care and treatment of more than 1,800 women patients.

Director of Laboratories.—As general administrator of the research activities in psychiatry, particularly from a laboratory standpoint, to direct the laboratory units in pathology, chemistry, bacteriology, and related groups; to conduct scientific conferences, and to participate in the various courses of instruction given to physicians and students.

Associate Psychotherapist (Female).—To conduct research and investigational work relative to the causes, symptomatologies, and mechanisms of mental diseases; to treat individual patients by psychotherapy.

Applicants must have been graduated from a medical school of recognized standing with a degree of M.D.

REPORTS AND NOTICES OF MEETINGS

NEW ENGLAND HEART ASSOCIATION

The February meeting of the New England Heart Association was held at the Beth Israel Hospital on the evening of February 3, 1936.

The first paper of the evening was "A Case of Coronary Occlusion with Interesting Features," by Dr. Harry B. Levine. A sixty-one year old man with a history of angina pectoris, and a high blood pressure, had a typical attack of coronary occlusion. The following day his apical rate rose to 180, there was a slight variation in the intensity of the first sound at the apex and vagal pressure had no effect. A diagnosis of ventricular tachycardia was made. Under quinidine therapy the rate dropped to 120. About two weeks later he developed auricular flutter with an auricular rate of 400 and ventricular rate of 200. Under digitalis the ventricular rate became 100. In spite of treatment, congestive failure set in about one month later and he had attacks of paroxysmal dyspnea. Several diuretics failed to help him and two years later he developed attacks of paroxysmal auricular fibrillation which were controlled by quinidine. From the onset of congestive failure, he received eighty-one injections of salyrgan and mercupurin. Recently a suppository form of mercurin has been used with marked diuresis, but it is sometimes necessary to use two suppositories in order to secure satisfactory results.

The second paper was on "The Evaluation of Medicinal Treatment of Angina Pectoris" by Dr. Joseph E. F. Riseman. The efficacy of medicinal treatment in angina pectoris was evaluated in twenty-five patients by means of the standardized exercise tolerance test and by observing the effect on the clinical frequency of attacks. The latter method by itself was of little value, as the clinical history was influenced by many factors, such as the psychological effect of treatment, spontaneous variations in the severity of the disease, and changes in the physical and emotional activity of the patient. According to the clinical history, as many patients were benefited by placebo pills as by any other medication. It is evident that an objective measure of the clinical response, such as the standardized exercise tolerance test, is necessary. Improvement due to medication is indicated by an increase in exercise tolerance which disappears when the medication is omitted and placebo medication is substituted, and which reappears only when the medication is again given, even if the appearance of the drug is disguised. According to these criteria, no patient showed improvement following placebo pills, sodium bicarbonate, potassium iodide or oral tissue extract. About one-third of the patients failed to improve following any of the fifteen different drugs. Slightly less than

one-half showed improvement following either aminophyllin (grains 3, four times daily) or quinidine sulphate (grains 5, four times daily). About one-third were benefited by erythral tetranitrate, codeine sulphate or atropine sulphate, and about fifteen per cent were helped by sodium nitrate, theophyllin calcium salicylate, or small doses of dinitrophenol (grains 1½ daily). Digitalis caused a marked increase in pain in about one-half of the patients.

Complete disappearance of cardiac pain was rare. Aminophyllin caused the greatest increase in exercise tolerance, 10 to 100 per cent; the remaining effective drugs allowed the patient to increase his work by about 20 to 50 per cent. For the routine treatment of angina, aminophyllin and quinidine sulphate offer the greatest possibility of giving benefit.

The third paper was on "Studies on the Effect of Nitroglycerine on Angina Pectoris" by Dr. Morton G. Brown. A group of patients with angina pectoris were given nitroglycerine gr. 1/500, according to two procedures. Patients were instructed to place one tablet under the tongue every hour during the day. In order to determine how soon the action began and how long it acted, the patients' exercise tolerance was determined at various time intervals after placing a tablet under the tongue. In about one-third of the patients the effect was marked and prolonged, lasting nearly an hour. In another third the effect was less prolonged and less striking. In the remaining patients it had no effect. The clinical results paralleled the exercise tolerance tests, in that those who showed the marked effect were free of angina while taking nitroglycerine at hourly intervals. Those in whom the action of nitroglycerine was of shorter duration derived benefit when they took the drug before that effort which usually precipitated the attack. The small dose of 1/500 gr. of nitroglycerine was found nearly as effective as the usual dose of 1/100 gr. and was unattended by untoward reactions whereas many of the patients receiving 1/100 gr. of nitroglycerine had reactions.

The fourth paper was on "The Incidence of Coronary and Hypertensive Heart Diseases in Different Population Groups" by Dr. Louis Silver. A study of the incidence of angina pectoris and coronary occlusion among the patients with arteriosclerotic and hypertensive heart disease of the Massachusetts General Hospital, The Baker Memorial, Phillips House and the Beth Israel Hospital, representing the several different strata of society, showed that the Jewish patients fairly outnumbered other races in the incidence of these diseases. In the Beth Israel Hospital there is an incidence of 56 per cent. It was shown that the incidence of angina pectoris and coronary occlusion is somewhat more frequent among Jewish immigrants than natives, and less common among Italian immigrants. The total number of patients with arteriosclerotic heart disease with or without coronary occlusion did not fluctuate greatly in these groups indicating that the process of degeneration works about equally in the different groups. It is in the early stormy and malignant manifestations of arteriosclerotic heart disease where the fluctuations are marked. These two coronary conditions occur twice as frequently in men as in women.

The fifth paper was "The Cardiac Output in Patients with Congestive Failure after Total Thyroidectomy" by Dr. Mark D. Altschule. The cardiac output, vital capacity, pulmonary circulation time, venous pressure, and arterial pressure were measured in twenty-three patients before and after total thyroidectomy. The work of the heart was calculated from the cardiac output by means of the formula of Evans. It was found that the cardiac output and work diminished as the basal metabolic rate fell after operation. The cardiac output decreased about 10 per cent more than the basal metabolism, especially in patients without congestive failure, so that the arteriovenous oxygen differences increased. This was less striking in patients operated on for the relief of congestive failure, since in such cases the cardiac output was low before operation. The relief experienced by the patients after operation was associated with a marked diminution in the work of the heart. In patients operated on for congestive failure, the cardiac output decreased to a level below which it merely balanced the oxygen consumption, thus giving such patients a margin in which to increase their cardiac outputs in response to activity.

The sixth paper was on "A Clinical and Pathologic Study of Aortic Stenosis" by Dr. Louis Wolff. This presentation is based primarily upon a study of sixteen cases of aortic stenosis without other valve lesions proved at autopsy. The youngest patient in this group was forty years old. Syncope occurred as a single episode in only one patient of this series. Angina pectoris occurred in two patients, in one of whom there was no evidence of coronary artery disease at postmortem examination. There was a question of angina pectoris in a third patient. There were no sudden deaths. Considerable loss of weight occurred in seven of these patients, usually beginning before the onset of cardiovascular symptoms. The description of the pulse, the pulse pressure, the aortic second sound, and a systolic thrill at the aortic area cannot be depended upon in making the diagnosis of aortic stenosis, on account of the infrequency with which these signs occur. The systolic thrill, however, may be regarded as the most significant sign, and if especial care and technique are used the thrill may be found in a high percentage of the cases.

The only constant sign occurring in aortic stenosis is a loud systolic murmur at the aortic area, and its only constant characteristic is transmission upwards into the vessels of the neck. This sign will be found in every patient with aortic stenosis unless there is a state of collapse or acute myocardial failure such as may follow coronary thrombosis and cardiac infarction. If we exclude cases of aortic stenosis, a systolic murmur at the aortic area is found in 10 per cent of all patients who, at autopsy, show some form of heart disease. This murmur, however, is not always produced at

the aortic valve. If the murmur is produced at the aortic valve and is transmitted at all, it is to be expected that the direction of its transmission will be in the direction of the blood flow, i.e., upwards into the vessels of the neck. In a group of over 160 autopsied cases such a murmur was found in aortic stenosis, recognized by the pathologist from fusion of the aortic cusps or by measurements of the aortic ring, in hearts in which the aortic leaflets were sufficiently sclerosed and stiffened to interfere with the free mobility of the cusps causing an impediment to the flow of blood from the ventricle into the aorta, thus constituting a functional aortic stenosis, and in luetic aortic dilatation. When the characteristic murmur is produced, the dilatation of the aorta is sufficiently great so that its recognition by physical examination or fluoroscopy is easy. All the evidence available from a study of this group and by comparison with a similar group of patients with aortic stenosis with other valve lesions proved at autopsy indicates that the etiology of the aortic stenosis in at least most of these cases is arteriosclerosis. No evidence could be found that rheumatic infection or other infections played a rôle in this particular series.

The seventh paper was "Calcified Stenosis of Aortic Valve" by Dr. M. J. Schlesinger. Sixteen cases of heart disease with calcified stenosis of the aortic valve without any other valvular lesions were analyzed from the viewpoint of sex, age, heart weight, amount of arteriosclerosis of the coronaries and of the aorta, chronic passive congestion of the viscera, degree of terminal congestive failure and other causes of death. In eleven of the cases, the valve ring was calcified, the leaflets were fused, thickened, and calcified, and shelf-like, and the opening was a slit; the others showed a less marked lesion. Only three of the patients were women, all of whom died of another disease. The youngest patient was forty and the oldest seventy-eight, and the ages were uniformly distributed in between. No correlation could be found with the degree of coronary sclerosis or arteriosclerosis of the aorta. One heart weighed 300 grams and one 840 grams. The others varied between 400 and 760 grams. The patient with the smallest heart died at fifty-one of carcinoma of the stomach with no evidence of cardiac failure. The largest heart was from the youngest patient (forty years) who showed much chronic passive congestion of the viscera and died an uncomplicated congestive failure death. Only two other cases showed any appreciable chronic passive congestion of the viscera. However, in nine of the cases, congestive failure was an important part of the terminal picture. Death in the other cases was due to causes extrinsic to the heart.

It was concluded that calcified aortic stenosis was a lesion rather well tolerated by the heart and usually well compensated for by hypertrophy of the left ventricle. When congestive failure sets in, the prognosis is poor. Calcified aortic stenosis can be considered an independent pathologic entity of the nature of localized arteriosclerosis. The mechanism of the localization on this valve is no more evident than is the mechanism of the localization of cerebral or coronary arteriosclerosis.

The eighth paper was "A Summary of Clinical Experience in the Treatment of Chronic Heart Disease by Total Thyroidectomy" by Dr. Herrman L. Blumgart. The results of total thyroidectomy at twenty-six clinics were summarized. Of the 185 patients whose condition was evaluated, 121 patients suffered from congestive failure, sixty-four from angina pectoris. Sixty-three per cent of the patients with congestive failure showed either excellent or moderate improvement, 18 per cent slight improvement, and 18 per cent no improvement. Of the sixty-four patients with angina pectoris, 86 per cent showed either excellent or moderate improvement, 9 per cent slight improvement, and 5 per cent no improvement. The operative mortality was 4.7 per cent. It was particularly encouraging to note that a large proportion of the patients had shown these results either one or two years after operation or two to three years after operation.

WILLIAM HARVEY SOCIETY

The next meeting of the William Harvey Society will be held Friday, April 10, in the Auditorium of the Beth Israel Hospital, Boston, at 8:00 P.M.

PROGRAM

Speaker: Dr. Elliott C. Cutler, Harvard Medical School.

Subject: "War Surgery."

Chairman: Dr. Horace Binney, Professor of Surgery, Tufts College Medical School.

AMERICAN HEART ASSOCIATION, INC.

The Twelfth Scientific Session of the American Heart Association will be held on Tuesday, May 12, 1936, from 9:30 to 5:30 P.M., at Hotel Phillips, Kansas City, Missouri. The program will be devoted to Cardiac Insufficiency.

GREATER BOSTON MEDICAL SOCIETY

Time: Thursday, April 9, 1936, 8:15 P.M.

Place: Auditorium, Beth Israel Hospital, Boston.

Results of Total Thyroidectomy in Twenty-Six Other Clinics. J. E. F. Riseman, M.D., Beth Israel Hospital.

A Social Study of Patients with Chronic Heart Disease Treated by Total Thyroidectomy. Miss Ethel Cohen, Director of Social Service, Beth Israel Hospital.

Meeting open to physicians, medical students, social service workers and nurses.

H. L. Linenthal, M.D., *President*,
D. B. Stearns, M.D., *Secretary*.

HARVARD MEDICAL SOCIETY

The next meeting of the Harvard Medical Society will be held in the Peter Bent Brigham Hospital Amphitheatre (Shattuck Street Entrance), Tuesday evening, April 14, at 8:15 P.M.

PROGRAM

Presentation of Cases.

Medical Inheritance. By Dr. Reginald Fitz.

Medical students and physicians are cordially invited to attend.

MARSHALL N. FULTON, M.D., *Secretary.*

WORCESTER NORTH DISTRICT MEDICAL SOCIETY

The annual meeting of the Worcester North District Medical Society will be held at the Burbank Hospital, Fitchburg, on Wednesday, April 22, 1936. The oration will be delivered by Dr. Clifford L. Derick of Boston. His subject will be "Staphylococcus Infection and Its Treatment."

Election of officers. Dinner at 1 P.M.

GEORGE P. NORTON, M.D., *President,*
FRANCIS M. MCMURRAY, M.D., *Secretary.*

WORCESTER DISTRICT MEDICAL SOCIETY

Worcester Hahnemann Hospital, Wednesday, April 8, 1936.

PROGRAM

6:15 P.M. Dinner. (Complimentary by Hahnemann Hospital.)

7:30 P.M. Business Session and Scientific Papers.

1. "Frontal Bone Osteomyelitis" by C. A. Croissant, P. H. Cook and F. Wonson, presented by Drs. Wonson and Cook.
2. "Undulant Fever—A Case Report with Necropsy" by E. A. Fisher and J. Gottlieb, presented by Dr. Gottlieb.
3. "Larostidin Treatment for Peptic Ulcer" by J. A. Koraywo, D. G. Ljungberg, A. P. Lachance, L. P. Leland and A. D. Vamvas, presented by Dr. Koraywo.

NOTICE

The next meeting of the Board of Censors for the Worcester District of the Massachusetts Medical Society will be held in the rooms of the Worcester District Medical Library, 34 Elm Street, Worcester, at four-thirty on the afternoon of Thursday, May 7, 1936. Application must be filed with the District Secretary two weeks before the time of the Censors' Examination.

WILLIAM F. LYNCH, M.D., *President,*
ERWIN C. MILLER, M.D., *Secretary.*

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

CALENDAR OF BOSTON DISTRICT FOR THE WEEK BEGINNING MONDAY, APRIL 6, 1936

Monday, April 6—

4:30 P.M. Boston Hospital Council. Lower Amphitheatre of the Out-Patient Department of the Massachusetts General Hospital.

Tuesday, April 7—

*9-10 A.M. Boston Dispensary, 25 Bennet Street, Boston. Diseases and Injuries to the Hip Joint. Dr. John D. Adams.

2:30 P.M. Pediatric Ward Visit. Massachusetts Eye and Ear Infirmary.

*8:15 P.M. Greater Boston Medical Society. Auditorium, Beth Israel Hospital.

Wednesday, April 8—

*9-10 A.M. Boston Dispensary, 25 Bennet Street, Boston. Recognition of the Early Psychoses; Their Differentiation from Neuroses. (Continued.) Dr. A. Warren Stearns.

†12 M. Clinico-Pathological Conference. Children's Hospital.

Thursday, April 9—

*8:30-9:30 A.M. Clinic, Surgical Staff of the Peter Bent Brigham Hospital, at the Peter Bent Brigham Hospital.

*9-10 A.M. Boston Dispensary, 25 Bennet Street, Boston. Development of Method in Psychopathology. Professor Elton Mayo.

*3:30 P.M. Medical Clinic at the Peter Bent Brigham Hospital.

Friday, April 10—

*9-10 A.M. Boston Dispensary, 25 Bennet Street, Boston. Rheumatic Fever. Dr. Clifford L. Derick.

12 M. Massachusetts General Hospital. Clinical Meeting of the Staff of the Children's Medical Service. Ether Dome.

8 P.M. William Harvey Society. Auditorium, Beth Israel Hospital.

Saturday, April 11—

*9-10 A.M. Boston Dispensary, 25 Bennet Street, Boston. Hospital Case Presentation. Dr. S. J. Tharnhauser.

*10-12. Staff rounds at the Peter Bent Brigham Hospital.

*Open to the medical profession.
†Open to Fellows of the Massachusetts Medical Society.

April 2—Faulkner Hospital Clinical Meeting, 5 P.M.

April 3—Carney Hospital Clinical Meeting, 8:30 P.M.

April 6—Boston Hospital Council. See page 663, issue of March 26.

April 8—Joint Meeting of the Massachusetts Tuberculosis League and the Hampden County Tuberculosis and Health Association. See "An address by Dr. Kendall Emerson." Page 498, issue of March 5.

April 9—Greater Boston Medical Society. See page 712.

April 9—Medical Clinic, Peter Bent Brigham Hospital. See page 709.

April 10—William Harvey Society. Beth Israel Hospital. See page 712.

April 10, 17, 24—Thomas William Salmon Memorial Lectures. See page 660, issue of March 26.

April 14—Harvard Medical Society. See page 712.

April 20-24—A Postgraduate Institute in Philadelphia. See page 497, issue of March 5.

April 27—Springfield Medical Association, 8:30 P.M. at the rooms of the Springfield Academy of Medicine, 20 Maple Street. The Development of Non-Surgical Specialties. Dr. Allen S. Johnson. The Development of Surgical Specialties. Dr. Eugene W. Beauchamp.

May 1, 2, 3, and 4—The American Association on Mental Deficiency. See page 610, issue of March 19.

May 11—American Medical Golfers Play in Kansas City. See page 710.

May 12—American Heart Association, Inc. See page 712.

May 12-16—The International Congress of Physical Medicine. See page 443, issue of February 27.

June 15-19—The Executive Board of the Catholic Hospital Association will meet at the Fifth Regiment Armory, Baltimore, Md.

June 16-July 28—Summer Course in Bacteriology. See page 385, issue of February 20.

September, 1936 — First International Conference on Fever Therapy. See page 1325, issue of December 26, 1935.

September 7-10—International Union against Tuberculosis. See page 554, issue of March 12.

October 19-23—Clinical Congress of the American College of Surgeons. See page 180, issue of January 23.

DISTRICT MEDICAL SOCIETIES

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

May 7—Thursday. Censors' Meeting.

May 13—Wednesday. Annual Meeting. Salem Country Club. Dinner at 7 P.M. Speaker: Dr. Paul White. Subject to be announced later.

R. E. STONE, M.D., Secretary.
88 Lothrop Boulevard, Beverly.

FRANKLIN DISTRICT MEDICAL SOCIETY

May 12—Weldon Hotel, Greenfield, at 11 A.M.

CHARLES MOLINE, M.D., Secretary.
Sunderland.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

May 6—Bear Hill Golf Club, Stoneham, at 12:15 P.M.

K. L. MACLACHLAN, M.D., Secretary.
1 Bellevue Avenue, Melrose.

NORFOLK DISTRICT MEDICAL SOCIETY

May—Annual Meeting. (Place, date and subject to be announced.)

The censors meet for the examination of candidates: May 7, 1936; November 5, 1936.

FRANK S. CRUICKSHANK, M.D., Secretary.
1236 Beacon Street, Brookline.

PLYMOUTH DISTRICT MEDICAL SOCIETY

April 16—Brockton Hospital.

May 21—Lakeville State Sanatorium.

G. A. MOORE, M.D., Secretary.
167 Newbury Street, Brockton.

SUFFOLK DISTRICT MEDICAL SOCIETY

April 29—Annual Meeting at the Boston Medical Library. The Treatment of Septicaemia, Dr. Champ Lyons. The Pleurality of Scarlatinal Streptococcus Toxin, Dr. Sanford B. Hooker. Discussion: Dr. Hans Zinsser.

The medical profession is cordially invited to attend this meeting.

ROBERT L. DeNORMANDIE, M.D., President,
CHARLES C. LUND, M.D., Secretary.

WORCESTER DISTRICT MEDICAL SOCIETY

April 8—See page 713.

May 7—Censors' Meeting. See page 713.

May 13—Wednesday afternoon and evening. Annual Meeting of Society. Time, place and details of program to be announced.

ERWIN C. MILLER, M.D., Secretary.
27 Elm Street, Worcester.

WORCESTER NORTH DISTRICT MEDICAL SOCIETY

April 22—See page 713.

BOOK REVIEWS

National Medical Monographs. The Management of Colitis. J. Arnold Bargen. 234 pp. New York: National Medical Book Company, Inc. $3.00.

In his recent book, Bargen has given an excellent picture of certain disturbances of the colon, including so-called mucous colitis, and ulcerative colitis. The latter is discussed in great detail and is covered in an excellent manner so far as the pathology, the x-ray findings, and the proctoscopic findings are concerned. So far as the etiology of the disease is concerned there is no doubt in the author's mind that he has found the cause of the disease when it is not due to tuberculosis, b. dysenteriae, or amebiasis. Unfortunately, the majority of other investigators do not accept Bargen's dictum as to the etiology of what is elsewhere called idiopathic ulcerative colitis, and it seems rather unfortunate that the matter should be treated in such a dogmatic manner as admitting of little or no doubt.

There is a welcome change in Bargen's attitude as far as the results of treatment are concerned,—whereas, in previous years cure of the disease was the expected outcome of therapy, in this volume he says definitely "one should not speak of its cure but its control". This, of course, fits in better with the experience of other men who realize the fundamental chronicity of the disease with a tendency to exacerbations and remissions.

It also seems as if too little has been said as to the value of ileostomy in carefully selected cases, not from the point of view of curing the disease but as a life-saving measure or as a means of placing a patient in the position of better economic security.

Amebic dysentery is well described except for the fact that practically no mention is made of the fever which may accompany it in rather obscure cases due to its complication, liver abscess. Tuberculosis of the colon is well described. The discussion of mucous colitis is an excellent one from the point of view of description of the disease and treatment and could be read with profit by any practitioner.

There is one fundamental mistake which appears in the book which the reviewer believes should be particularly noted. In one of the several illustrations, attention is called to the common reference of pain from various points in the large bowel. In his illustration, as well as in the text, it is noted that colonic pain is referred to a region high in the epigastrium in the midline, not far below the tip of the xiphoid. This is so far from being the case that it represents a very important diagnostic error inasmuch as colonic pain is almost always referred to a point well below the umbilicus.

With the exception of the above criticism, the reviewer considers the book a valuable source of reference for the description of some of the major ailments of the colon.

Diseases of the Skin. Frank Crozer Knowles. Third Edition. 640 pp. Philadelphia: Lea & Febiger. $6.50.

Dr. Knowles' third edition has been thoroughly revised, with numerous new photographs. The field of general dermatology is well covered. Syphilis and the acute eruptive fevers are also considered. Numerous prescriptions and tables of diagnostic features are given and much that is new in therapy has been added.

Studies from the Rockefeller Institute for Medical Research. Reprints. Volume 94. 603 pp. New York: The Rockefeller Institute for Medical Research.

This group of reprints from the Rockefeller Institute covers a wide range of material from the various departments and from the hospital. Of special interest to clinicians are the various articles by Page and his associates on the relation of the renal nerves to hypertension. A group of papers from the Department of Plant Pathology cover various phases of the tobacco mosaic disease. One feature of special interest from the Department of the Laboratories is the report by Carrel and Lindberg on the culture of whole organs. This is an interesting and conservatively written report, giving in detail the procedures on which some press publicity developed last summer.